

## New and Rare Malayan Plants (Series VI.)

BY H. N. RIDLEY.

This paper is a continuation of the previous series of descriptions of new plants of our region chiefly from the Malay Peninsula, the specimens of which are preserved in the Singapore Gardens Herbarium. Some are plants which have been collected some years ago but not previously described, others have been recently collected by myself in various expeditions, or sent by collectors.

### TERNSTROEMACEAE.

*Sarauja* (§ *Cauliflores*) *rubens*, n. sp.

A large shrub or small tree about 20 ft. tall glabrous, leaves oblanceolate narrowed gradually to the base and decurrent on the petiole broadest in the upper part, shortly acute, rather thin textured, nerves 14 pairs, dark above, a little paler beneath, margins entire, 9 inches long 4 inches wide, petiole  $1\frac{1}{2}$  inch long. Flowers in clusters on the base of the trunk numerous on pedicels 2 inches long. Buds bright rose pink. Calyx lobes ovate orbicular rounded deep rose pink  $\frac{1}{4}$  inch long. Petals ovate orbicular white. Stamens about 20 free from the corolla. Anthers oblong opening by pores. Ovary glabrous, not scaly. Styles 3 united for half their length.

Selangor: Semangkok Pass, at the foot of the hill leading to the Sempang mines.

This belongs to the group of *Saraujas* which bear the flowers in tufts on the stems and is allied to *S. cauliflora*, Bl. differing in its glabrousness, the bright cherry red sepals and buds, free stamens, and connate styles.

*Eurya acuminata* var. *monticola*.

Small tree 20-30 feet tall, branches and young leaves silky hairy. Leaves entire coriaceous, apex shortly acuminate quite blunt, base rounded or slightly narrowed,  $\frac{3}{4}$ -2 inches long,  $\frac{1}{2}$ - $\frac{3}{4}$  inches wide, drying greenish above yellowish beneath, above glabrous beneath nerves and midrib hairy. Flowers nearly glabrous, buds ovoid obtuse. Sepals and petals as in type form. Styles connate for  $\frac{2}{3}$  of their length.

Pahang: Gunong Berembun (No. 13909); Perak: Gunong Kerbau (Aniff) at 6000 ft.

This appears to me to be a mountain form of *E. acuminata*, DeC. The leaves are more coriaceous and quite blunt at the tip, and the branches very hairy. The Gunong Kerbau plant has very small leaves, which occasionally show traces of serration.

## TILIACEAE.

*Elaeocarpus reticulatus*, n. sp.

Branches black. Leaves oblanceolate, apex shortly acuminate, long acuminate at the base, margins thickened bluntly serrate, reticulations conspicuous, coriaceous,  $2\frac{1}{2}$  inches long,  $\frac{3}{4}$  inch wide, petiole  $\frac{1}{4}$  inch long. Flowers in short terminal racemes shorter than the leaves nodding. Bracts linear oblong obtuse. Pedicels  $\frac{1}{4}$  inch long silky. Sepals  $\frac{1}{4}$  inch long, 4 linear oblong obtuse silky. Petals 4 oblong truncate shortly lacinate hardly longer than the sepals, silky. Stamens 10, filaments very short. Anthers linear pubescent. Ovary short conic silky. Torus silky short.

Selangor: Ulu Kali Mountain, 3,500 feet (Burn-Murdoch).

Allied to *Elaeocarpus punctata*, King.

## AMPELIDEAE.

*Pterisanthes pulchra*, n. sp.

Stem slender wiry arachnoid. Lower leaves trifoliate, leaflets lanceolate acuminate, lateral ones oblique, central one  $2\frac{1}{2}$  inches long,  $\frac{3}{4}$  inch wide, lateral ones smaller, upper leaves simple ovate cordate acuminate 2 inches long,  $1\frac{1}{4}$  inch wide, all deep green bullate above with solitary hairs on the centre of the bullae, midrib hairy, beneath densely covered with ferruginous elevated masses of hair, margins slightly undulate, nerves 4 pairs in the cordate leaves, petiole half an inch long rufous hairy. Inflorescence opposite the leaves with a slender peduncle  $1\frac{1}{4}$  inch long arachnoid, bearing 2 slender branches, one forming a tendril 3-4 inches long, the other bearing a flattened sinuate spike 5 inches long on a secondary peduncle about the same length all slightly arachnoid hairy. Spike undulate sinuate cut to the rachis about 4 times,  $\frac{1}{4}$  inch wide green, or reddish, rachis hairy. Male flowers not seen. Females scattered globose.

Selangor: Sempang Mines climbing over rocks.

A most charming little climber of which I only found a single plant in flower.

## LEGUMINOSAE.

*Bauhinia cuprea*, n. sp.

Climber with long curled tendrils branches slender red tomentose. Leaves ovate entire or shortly bifid with short blunt lobes a quarter of the length of the leaf, lamina 3 inches long,  $2\frac{1}{2}$ -3 inches wide, above glabrous beneath red ferruginous with closely appressed silky hairs, nerves 7 elevated on the back rising from the base, petiole 1 inch long swollen at the top subglabrous. Flowers panicle, in a 2 inch panicle, few red, pedicels 2 inches long red pubescent. Calyx tube cylindrical narrow half an inch long, lobes pubescent boat-shaped  $\frac{3}{8}$  inch long equal. Petals broadly ovate rounded,

clawed an inch long  $\frac{1}{2}$  inch wide, densely covered with appressed red hairs. Stamens 3 very short, filaments red hairy at the base, anthers rounded shortly oblong, not longer than the claw of the petal. Style hairy, fruit not seen.

Perak: Gunong Keledang (Ridley 96901).

This beautiful plant might be *B. Scortechinii* of King of which I have seen no specimen but taking the description, it differs in the flowers being paniced, on long pedicels, the buds ovoid not clove shaped, the longer calyx tube, caducous bracts and clawed petals.

*Bauhinia calycina*, n. sp.

Climber, young parts covered with red meal. Leaves broadly ovate or almost orbicular bilobed, lobes rounded cut about  $\frac{1}{3}$  way down, base cordate, glabrous, nerves 10 from the base, 3-5 inches long, 3-5 inches wide, petiole  $1\frac{1}{2}$ -2 inches. Flowers racemose large white, rachis red mealy. Pedicels  $1\frac{1}{2}$  inches long. Bracts lanceolate acuminate red pubescent. Calyx lobe  $\frac{1}{4}$ - $\frac{1}{2}$  inch long, campanulate lobes 5, linear acuminate acute red woolly  $1\frac{1}{4}$  inch long. Petals little longer linear, glabrous. Stamens 3 thick angled,  $\frac{3}{4}$  inch long, filaments very short, base of anther retuse, all glabrous. Style short pubescent. Pod oblong cuspidate 7 inches long 2 inches wide, stalked above the enlarged calyx tube,  $1\frac{1}{2}$  inch long. Seeds four elliptic flat.

Johore: Gunong Pulau; Selangor: Kwala Lumpur and Petaling; Negri Sembilan: Bukit Tanga (Napier), Bukit Kupayiang (Cantley), Seremban (Ridley 10047).

Tendrils long curled, "Akar Kurutop Hitam." Roots boiled for dropsy.

A very remarkable plant from the very long calyx lobes, short petals and very short filaments with long thick anthers. Most nearly allied to *B. Griffithiana*, Prain.

*Crudia penduliflora*, n. sp.

Tree. Leaves with 4 alternate leaflets, apex not prolonged, leaflets distant elliptic cuspidate rounded at both ends nerves 6 pairs lowest ones smallest glabrous thinly coriaceous drying brown on both sides, 1 to 4 inches long,  $1\frac{1}{2}$  inch wide, cusp  $\frac{1}{2}$  inch long, petiolule short stout, black wrinkled glabrous,  $\frac{1}{3}$  inch long. Racemes simple pendulous 12 inches long, flowers small numerous, subdistant nearly sessile,  $\frac{1}{8}$  inch long. Buds ovoid. Calyx lobes 4 ovate glabrous. Petals 0. Stamens 5, filaments slender, anthers rounded elliptic. Pistil covered with red hairs conic. Style filiform  $\frac{1}{3}$  inch long.

Malacca: foot of Gunong Mering, Mt. Ophir (Ridley 3004).

This plant differs from any other known to me in its long simple racemes and small flowers. It appears also to have only five stamens. The nerves of the leaves are invisible above, beneath they are seen to interarch well within the margin.

NEW AND RARE MALAYAN PLANTS.

MELASTOMACEAE.

*Melastoma mutica*, n. sp.

Bush, branches terete covered with short flat processes, and larger ones lanceolate triangular acute and laciniate. Leaves unequal lanceolate acuminate acute base hardly narrowed, above covered with fine appressed pubescence, beneath similar with longer hairs on the nerves; nerves 5, depressed above, elevate beneath, transverse nervules parallel numerous, 3-6 inches long  $1\frac{1}{2}$ -2 inches wide, petiole half an inch long densely hairy. Flowers few shortly stalked large rose pink. Bracts ovate to lanceolate cuspidate densely hairy with lanceolate acuminate processes, half an inch long and as wide. Calyx tube  $\frac{1}{2}$  inch long ovoid densely finely covered with yellowish hairs. Petals cuncate obovate, apex broad rounded truncate,  $1\frac{1}{8}$  inch long,  $1\frac{1}{8}$  inch wide. Stamens similar filaments as long as the anthers, shorter than the petals, anthers cylindric acuminate base bilobed, not prolonged, wrinkled.

Selangor: Hulu Semangkok (Ridley).

Allied to *M. sylvaticum*, Bl. Remarkable among our species in having the stamens all similar..

*Ochtocharis sylvestris*, n. sp.

Small shrub, stem woody solid, erect 2 feet tall, about  $\frac{3}{8}$  inch through glabrous, bark pale. Leaves ovate lanceolate or ovate acuminate glabrous except at the base, on both sides, and nerves two pairs rising from the base 7 inches long, 3 inches wide, petiole 1-2 inches long hairy along the upper edge. Flowers in small axillary fascicles much shorter than the petioles, pedicels very short. Ovary glabrous urn-shaped. Sepals triangular mucronate, rather large spreading. Petals oblong broad. Stamens short 8. Anthers oblong obtuse, all similar, hairs hardly prolonged below, apices distinct divaricate excurved, appendage solitary, conic very short, Capsule  $\frac{1}{8}$  inch long globose grooved, crowned with the calyx lobes, dehiscing irregularly.

Malacca: Merlimau (N. Cantley) 9/2/86. Johore: Tanjong Kupang (6504), Mt. Austin (Ridley 12012).

In wet places in woods.

*Phyllagathis cordata*, n. sp.

Stem hollow hairy. Leaves ovate cordate, abruptly acuminate, margins crenate subdentate, each tooth bearing a long red hair, nerves 9 radiating from the base, transverse nerves prominent beneath above glabrous, beneath with scattered long hairs on the nerves and nervules, 9 inches long 7 inches wide, petiole covered with red hairs stout, 6 inches long. Inflorescence shortly paniced. peduncle nearly 1 foot long, panicle 4-5 inches long, with few short branches at base, above racemose. Flowers about 3 on a branch, all glabrous. Bracts very small lanceolate. Calyx cylindric  $\frac{1}{4}$  inch long with 5 short lanceolate teeth. Corolla petals lanceolate. Stamens 5 subequal and similar, anthers subcylindric slightly acuminate

muticous. Capsule pale subglobose not narrowed at the base smooth, lobes subovate, valves broad oblong truncate not much longer,  $\frac{1}{3}$  inch long and as wide, pedicels elongate to half an inch.

Johore: Gunong Janeng (Kelsall) "Kakapullum." Nearest to *Ph. Griffithii* with very different foliage.

The flowers are unfortunately rather young.

*Sonerila nodosa*, n.sp.

Stem slender flesh red swollen at the nodes, sprinkled with glandular hairs over 3 inches long. Leaves unequal, or nearly equal lanceolate long acuminate, margins undulate subdentate with minute thorn-like processes, base rounded unequal, nerves 3 from base, secondary nerves from the midrib fine, at a sharp angle texture thin fleshy sprinkled with a few coarse hairs on the upper surface, glabrous on the lower surface, with many raphides bundles, blade  $3\frac{1}{2}$  or less long by  $\frac{3}{4}$  inch wide, petiole 1 inch long, small leaves  $\frac{1}{4}$ - $\frac{1}{2}$  inch long petiole as long. Flowers small white in short cymes on the upper axils on pedicels  $\frac{1}{4}$  inch long lengthening in fruit. Calyx  $\frac{1}{10}$  inch long lobes short acute. Fruit campanulate oblong truncate as broad as long, not ribbed or pustular, minutely punctate  $\frac{1}{8}$  inch long, base broad.

Perak: Bujong Malacca (Ridley, Sept. 1898).

Not much resembling any other of our species; peculiar for its nodose stem.

*Sonerila Gimlettei*, n. sp.

Stem woody 6 inches tall with fibrous roots,  $\frac{1}{8}$  inch through smooth. Leaves only at the top, unequal, ovate lanceolate acuminate at both ends sessile, or rather petiole winged to base glabrous except the petiole covered with long red hairs and midrib also hairy, nerves 5 from the base, with about 12 lateral ones 6-8 inches long, 3 inches wide, shorter leaves 4 inches long by 2 wide. Cymes scorpioid many flowered, peduncle hairy,  $1\frac{1}{2}$  to 2 inches long. Flowers not seen. Fruit cupular smooth neither ribbed or warty, or with faint traces of warts  $\frac{1}{8}$  inch long, stalk as long ribbed.

Kelantan: Kwala Lebir (Dr. Gimlette). Leaves used as a poultice for boils.

Remarkable for its woody stem and large leaves. Allied to *S. biserialis*, Cogn.

*Sonerila calophylla*, n. sp.

Rhizome tuberous, stem succulent simple or branched 2-8 inches tall glabrous bare below. Leaves crowded in a false rosette at the top, fleshy green or brown marbled with white, glabrous oblong or ovate oblong obtuse base rounded, nerves 4 pairs decurrent on the midrib, secondary nerves few fine, margin with distant short thorn-like processes, 2-3 inches long, 1 inch or less wide, petiole half an inch long. Flowers 3 or 4 crowded in a cyme on a peduncle 1 to 2 inches long, erect. Calyx subcylindric, with very short acute

teeth, about  $\frac{1}{4}$  inch long. Petals oblong lanceolate, minutely cuspidate  $\frac{1}{4}$  inch long rose or white. Stamens 3 little longer than the petals, filaments as long as the anthers. Anthers yellow linear acuminate base bifid, apex acuminate. Style filiform shorter. Capsule funnel-shaped smooth on a thickened stalk, smooth  $\frac{1}{4}$  inch long, crowned with the triangular acute sepals.

Kedah: Gunung Jerai (Ridley 5345).

Near *S. Cyclaminella*, Stapf., but much larger.

*Medinilla pendens*, n. sp.

Epiphytic with pendulous stems 4 or 5 feet long slender, pale, and watered,  $\frac{1}{8}$  inch through. Leaves rather fleshy ovate acuminate, tip obtuse, base broad, nerves 3, midrib and two nerves from the base, barely visible 4 inches long  $1\frac{1}{4}$  inch wide, petiole  $\frac{1}{8}$  inch long very thick. Peduncle stiff  $1\frac{1}{4}$  inch long. Flowers  $\frac{1}{4}$  inch long, pedicel  $\frac{1}{10}$  inch long. Calyx urn-shaped with 5 small teeth. Corolla lobes oblong obovate as long as the corolla obtuse  $\frac{1}{3}$  inch long waxy white. Stamens 7, violet glabrous, filaments slender little shorter than the anther. Anther lanceolate acuminate narrow, with 2 short curved processes in front at the base and one on the back. Style short slender.

Johore: pendent from trees overhanging the Panti river at Kota Tinggi.

Allied to *M. Hasseltii* I think, but the long hanging stems and small flowers make it very distinct.

#### RHIZOPHORACEAE.

*Carallia suffruticosa*, n. sp.

Shrub, branches slender slightly ribbed glabrous. Leaves elliptic acute at both ends thin, glabrous margin closely set with short processes, nerves 12-13 pairs of primary nerves, intermediates nearly as prominent, under surface of leaves dotted 3-5 inches long  $1\frac{1}{2}$ - $1\frac{3}{4}$  inch wide, petiole  $\frac{1}{2}$  inch. Stipules lanceolate keeled  $\frac{1}{4}$  inch long. Flowers in short axillary racemes, shorter than the petiole. Bracts persistent ovate keeled. Calyx  $\frac{1}{8}$  inch long campanulate lobes 5 lanceolate coriaceous keeled within acute. Petals linear oblong lacerate fimbriate nearly to the base as long as the sepals. Stamens ten unequal, the longest opposite the sepals, filaments filiform. Anthers elliptic, shorter ones apiculate. Style stout simple. Stigma capitate. Disc 5-lobed.

Selangor: Dusun Tua (7371). Flowers white and yellow.

Very distinct from anything I know, in its shrubby habit short racemes, and fimbriate lacerate petals.

#### MYRTACEAE.

*Decaspermum montanum*, n. sp.

A shrub with pale bark. Leaves opposite coriaceous obovate obtuse narrowed at the base, 2 inches long by one inch wide, penninerved, nerves five inconspicuous, midrib prominent beneath, no

intramarginal nerve, petiole  $\frac{1}{10}$  inch long. Flowers in short axillary racemes about 1 inch long, in the axils of fallen leaves, about 6 in a raceme small white. Bracts linear subulate  $\frac{1}{10}$  inch long. Petals  $\frac{1}{4}$  inch or less. Flowers unisexual or often so. Males slightly larger than the females. Buds globose. Sepals orbicular ciliate glandular. Petals obovate ciliate, obtuse. Stamens very numerous as long as the petals. Females buds clove-shaped, sepals smaller, petals shorter and rounder. Stamens abortive, filaments very short, anthers rounded. Style moderately stout filiform. Berry  $\frac{1}{8}$  inch long, globular five or four ridged, crowned by the persistent calyx lobes, septate with cells containing single seeds. Seeds 4-5 brown reniform with a rounded back, and rather short inner edge.

Kedah Peak: Gunong Jerai (Ridley 5356, 5357, 5209); Mt. Ophir (Ridley 3310), (Hullett 775), (Derry 608).

The Mount Ophir form has often much larger leaves, 3 inches long  $1\frac{1}{2}$  inch wide, more strongly veined, and larger racemes than that of Kedah Peak, and might be made a variety, but I obtained a form on Mt. Ophir which exactly resembled the Kedah Peak one.

This plant I refer to the genus *Decaspermum* as it most closely resembles *D. paniculatum* although it has but five seeds. The genera *Myrtus*, *Decaspermum* and *Rhodamnia* are really very closely allied, the differences in the ovary being but slight.

*Eugenia auriculata*, n. sp.

A tree, branches stout  $\frac{1}{4}$  inch through bark pale. Leaves stiffly coriaceous elliptic obtuse base rounded auricled nearly sessile, glabrous midrib prominent beneath, nerves 12 pairs visible above very inconspicuous beneath interarching into an intramarginal vein, 6 to 9 inches long, 3 inches wide. Flowers fascicled on short stout peduncle from the sides of the branches or terminal white. Calyx tube campanulate narrowed to the base but not pseudo stalked  $\frac{3}{8}$  inch long, mouth as broad with 4 short obscure rounded lobes, pustulate, hardly distinct. Petals oblong thick obtuse  $\frac{1}{4}$  inch long. Stamens very numerous.

Dindings: Lumut (Ridley 8376).

This species is allied to *E. perakensis*, King, but the nervation of the leaves is quite different, the leaf being thicker and the nerves close and inconspicuous, the calyx also has no pseudo-stalk as in that species.

*Eugenia longicauda*, n. sp.

Branches rather slender. Leaves lanceolate elongate acuminate narrowed at the base very coriaceous, glabrous above deeply punctate with the nerves hardy visible, beneath reddish brown not punctate, nerves very inconspicuous 8 pairs, with an intramarginal nerve close to the edge, 1-1 $\frac{1}{2}$  inch long  $\frac{1}{8}$ - $\frac{1}{4}$  inch wide, petiole  $\frac{1}{8}$  inch long, transversely rugose. Flowers in short few flowered axillary and terminal racemes in the upper part of the branches, peduncle very

short  $\frac{1}{3}$  inch. Calyx tube  $\frac{1}{2}$  inch long campanulate tessellate verrucose, lobes 5 ovate or semicircular rounded. Petals and stamens wanting.

Pahang: Kluang Terbang (Barnes 10869).

Incomplete as the specimens are, this is so curious and distinct a species that I describe as much as I have of it. The small narrow leaves with a very long blunt point are not matched by any other species known to me, and the singular verrucose tessellate calyx tube more like that of a *Pternandra* is very remarkable.

*Eugenia johorensis*, n. sp.

Tree, branches slender 4 angled. Leaves in rather distant pairs elliptic acuminate obtuse base rounded, coriaceous smooth, nerves above inconspicuous, beneath prominent 8 pairs with secondary nerves nearly as prominent between, intramarginal vein a quarter of an inch from the margin with another close to the margin, midrib beneath prominent. Leaf drying dark brown 4 to 5 inches long 2 inches wide. Petiole stout  $\frac{1}{4}$  inch long. Flowers in pairs on a short inch long, terminal raceme 2 inches across. Calyx shortly campanulate rather abruptly narrowed at the base, lobes 4 ovate rounded apex obtuse. Petals coriaceous  $\frac{1}{2}$  inch long ovate rounded. Stamens very numerous fine an inch long, anthers very small.

Johore: Gunong Pulai (native collector).

This species is allied to *E. pauciflora* differing in its much larger flowers and distinctly petioled elliptic leaves.

*Eugenia Rostadonis*, n. sp.

Branches slender terete. Leaves lanceolate acuminate subacute narrowed at the base, thinly coriaceous, above dark when dry below grey, 4-6 inches long, 1 to  $1\frac{3}{4}$  inch wide nerves 6-7 pairs depressed above elevated beneath meeting in arches  $\frac{1}{2}$  inch from the margin reticulations few, petiole  $\frac{1}{4}$  inch long. Flowers few 4 to 5 or less in a terminal cyme. Bracts minute linear persistent  $\frac{1}{20}$  inch. Pedicels  $\frac{1}{2}$  inch long. Calyx funnel-shaped gradually narrowed into a pseudostalk, half an inch long, lobes four more than half as long as the calyx tube ovate. Flowers  $\frac{3}{4}$  inch across. Petals herbaceous with a thinner edge white orbicular nearly  $\frac{1}{4}$  inch long. Stamens half an inch long with very small anthers.

Tringanu at Bundi (Coll. Rostado).

Perhaps nearest to *E. plumbea*, King. The leaves are in rather distant pairs, dark and smooth above, and light smooth grey beneath.

*Eugenia porphyrantha*, n. sp.

A tree with slender terete branches. Leaves lanceolate acuminate subcoriaceous base rounded cordate 6 inches long 2 inches wide, nerves sunk above, prominent beneath 16 pairs subhorizontal meeting in an inarching intramarginal vein  $\frac{1}{2}$  inch from the margin, petiole thick  $\frac{1}{2}$  inch long or less. Leaf when dry dark blackish



brown. Flowers 2 or 3 on a very short terminal raceme,  $\frac{1}{4}$  inch long. Calyx half an inch long obconic narrowed to a pseudostalk lobes 4 very short indistinct rounded. Petals ovate broad-based, longer. Stamens under half an inch long densely crowded purple. Selangor on Bukit Kutu (Ridley 7313).

The lanceolate cordate leaves and few purple flowers are peculiar.

*Eugenia nemoricola*, n. sp.

A small tree, branches terete slender. Leaves narrow lanceolate acuminate 11 inches to 12 long,  $2\frac{1}{2}$  to 3 inches wide, base rounded cordate nearly sessile thinly coriaceous, primary nerves 7 to 15 pairs sunk above, prominent beneath, remote interarched into an intramarginal nerve  $\frac{1}{8}$  inch from the edge, drying light brown above yellowish brown beneath. Flowers solitary or few terminal. Calyx tube broadly campanulate rather abruptly narrowed smooth with short rounded lobes.

Penang: Richmond pool (Ridley).

The specimens are somewhat imperfect. It is allied to *E. cauliflora*, Ridl., but the flowers are terminal, and the venation very different, the nerves being much fewer.

*Eugenia oreophila*, n. sp.

A shrub, branches rather thick, grey angled. Leaves crowded towards the ends of the branches obovate or elliptic obovate obtuse, apex usually rounded coriaceous,  $1\frac{1}{4}$  inch long, 1 inch wide, light olivaceous when dry shining, margins recurved, nerves 9 pairs reaching to the intramarginal inarchings, secondary nerves numerous reticulate, all elevate on both sides, petiole  $\frac{1}{8}$  inch long. Flowers few in short terminal cymes, the whole inflorescence an inch long. Pedicels short and thick. Calyx tube clove-shaped gradually narrowed to the base. Lobes orbicular ovate 4, distinct half as long as the tube,  $\frac{1}{8}$  inch long. Petals larger than calyx lobes orbicular white. Stamens very numerous  $\frac{1}{4}$  inch long.

Selangor: Ulu Semangkok (F. Denny's) "Kelat Bukit."

A distinct plant in its rounded reticulate leaves and rather large flowers for its size.

*Planchonia grandis*, n. sp.

A big tree 80 feet tall or more, and six feet in girth at the base. Bark brown vertically grooved. Branches reddish brown. Leaves very coriaceous dark green obovate oblong shortly acuminate, blunt narrowed at the base margins entire, nerves prominent 15 pairs, 6 to 7 inches long  $3\frac{1}{4}$  inch wide, (drying black, shining above), petiole  $\frac{1}{2}$  inch long. Flowers numerous in a short dense spike sessile, terminal. Calyx tube obconic not ribbed  $\frac{1}{4}$  inch long green, lobes orbicular ovate rounded at the tip  $\frac{1}{4}$  inch long. Petals orbicular  $\frac{3}{4}$  inch long green, much shorter than the stamens. Stamens very numerous, 2 inches long forming a whorl 4 inches across,

white, base crimson, anthers small oblong yellow. Style slender white  $1\frac{1}{2}$  inch long. Fruit oblong globose green, inside white, 3 inches long, 2 inches across, crowned with the sepals. Seeds 3 or more brown half an inch long. Embryo convolute with a long radicle.

Singapore: Botanic Gardens Jungle (6243 of my collections). This fine tree differs from *Pl. sundaica*, Miq. in its entire leaves, oblong in shape, larger stamens and shorter petals.

The fruit is apple-shaped and has a peculiar turpentine-like odour.

#### CORNACEAE.

##### *Alangium Tutela*, n. sp.

A small sized tree. Leaves elliptic to lanceolate cuspidate base cuneate alternate glabrous, thinly coriaceous drying grey, nerves hardly conspicuous above strongly elevated beneath  $\uparrow$  to 8 pairs, transverse nervules and reticulations distinct, 4 to 6 inches long, 2 to  $2\frac{1}{2}$  inches wide, petiole half an inch long, stout strongly transversely rugose. Flowers in short axillary cymes of four or five flowers, peduncle very short  $\frac{1}{8}$  inch long, pedicels as long. Bracts caducous minute ovate acuminate. Calyx tube  $\frac{1}{8}$  inch long narrowed towards the base ribbed, limb saucer-shaped entire short. Petals linear oblong 5 recurved white, mealy outside half an inch long. Stamens nearly as long as the petals 6 linear pubescent. Style shorter clubbed.

Singapore: Ponggol (Ridley 5082).

This is the genuine "Kayu Tas" the properties of which according to the Malays are such that tigers will flee from any one carrying a piece of its wood. Sticks of the tree are often sold for this purpose and Malays travelling in the forests often wear a small piece of the wood on a chain as a protection.

The tree appears to be rare, and I am not sure that the Singapore plant has not been introduced from elsewhere.

The short few flowered cymes and small leaves distinguish it from any other species known to me.

#### CAPRIFOLIACEAE.

##### *Viburnum villosum*, n. sp.

A shrub, the branches covered with thick yellow hairs. Leaves opposite elliptic to lanceolate thinly coriaceous base rounded, apex acuminate, above glabrous, or in young leaves with yellow hairs on the midrib, beneath cinnamon coloured with yellow hairs softly villous, 5-6 inches long  $2\frac{1}{2}$ -3 inches wide nerves 4-6 pairs petiole villous, becoming at length glabrescent  $\frac{3}{4}$  inch long. Inflorescence umbellate, terminal cymose  $1\frac{1}{2}$ -2 inches long villous, peduncles rather stout  $\frac{3}{4}$  inch long, branches short. Flowers small sessile green. Calyx tube cylindrical hairy, lobes ovate acute. Corolla tube short

$\frac{1}{10}$  inch long glabrous cylindric thick lobes rounded ovate, as long as the tube 5. Stamens twice as long as the corolla 5. Anthers oblong, filaments thick. Style cylindric obtuse glabrous longer than the calyx lobes. Fruit not seen.

Selangor: on Bukit Kutu at 3000 feet altitude (Ridley 7597), May 1890.

Very distinct in its hairiness.

#### RUBIACEAE.

##### *Argostemma reptans*, n. sp.

A dwarf plant 2 to 3 inches tall with a slender creeping rhizome emitting stems at intervals and often forming small tufts in cracks in rock. Stems slender corky. Leaves unequal, larger ones lanceolate subrhomboid equally narrowed to both ends subcoriaceous, margins crenulate with short teeth on each crenulation quite glabrous, above grey when dry with the midrib prominent, and the nerves usually invisible, beneath similar but brown,  $\frac{1}{2}$ - $\frac{3}{4}$  inch long,  $\frac{1}{4}$  inch wide or less, petiole short  $\frac{1}{10}$  inch long; smaller leaf narrow linear lanceolate  $\frac{1}{8}$  inch long resembling the stipules, entire. Flower solitary terminal on a peduncle  $\frac{3}{4}$  inch long with two very small linear, lanceolate bracts half way up. Sepals lanceolate acuminate  $\frac{1}{10}$  inch long. Corolla white  $\frac{3}{4}$  inch across, tube very short lobes lanceolate acute  $\frac{1}{8}$  inch across. Stamens in an acuminate cone nearly as long. Fruit not seen.

Kedah: on Gunong Jerai on rocks in the stream near the top alt. 3000 feet, June 1893.

I do not know any species much resembling this pretty little plant, the corky transversely wrinkled stem, and the peculiar leaves make it very distinct. In some the nerves are quite invisible, in others four pairs can be seen, the margin is also sometimes more serrate or dentate than crenulate and in one or two leaves I find two or 3 setæ on the upper midrib.

##### *Argostemma johorensis*, n. sp.

Stem elongate ascending rooting for a long way with slender wiry roots 18 inches long, leafy ascending portion 6 to 10 inches long covered with appressed hairs. Leaves unequal in distant pairs, largest elliptic to lanceolate acuminate, or cuneate, base little narrowed inequilateral, membranous, above glabrous, nerves 6-7 pairs often invisible, usually conspicuous, beneath similar not glaucous, but midrib covered with appressed hairs, 2 to 4 inches long,  $\frac{3}{4}$ -1 $\frac{1}{4}$  inch wide, petiole  $\frac{1}{10}$ - $\frac{1}{8}$  inch long, small leaf ovate cordate acuminate or rounded at the tip  $\frac{1}{4}$  inch long or less glabrous or edge ciliate. Stipules oblong ovate, as long as the small leaf. Cyme compound of three branches on a peduncle 1 inch long terminal or on a side branch. Branchlets 1 inch or less with about 5 flowers on each, bracts 2 or 3 lanceolate acute,  $\frac{1}{10}$  inch long. Pedicels  $\frac{1}{4}$  inch long glabrous. Sepals ovate acute closely pubescent hairy. Corolla half

an inch across tube very short, lobes very narrow lanceolate linear acuminate  $\frac{1}{10}$  inch across at the base white. Stamens in a fairly stout acuminate cone as long as the petals. Fruit shortly cupular  $\frac{1}{8}$  inch long densely hairy.

Johore: Tempayan river (Ridley 13270), Sungei Tebrau (13207), Mt. Austin; Serom near Batu Pahat. In low wet forest.

Apparently confined to South Johore. Distinct in its long stem with elongate internodes, often an inch long, narrow corolla lobes and hairy capsule.

*A. johorense* var. *Kelsalli*.

Stems shorter and leaves more crowded, hairy. Leaves lanceolate subacute base rounded marginal above glabrous nerves visible 7 pairs,  $2\frac{1}{2}$  inches long,  $1\frac{1}{4}$  inch wide, beneath paler nerves elevated covered with spreading hairs, and scattered hairs between, small leaves orbicular, glabrous, petiole  $\frac{1}{8}$  inch long hairy. Cymes few flowered. Calyx as in type. Corolla lobes slightly broader and shorter. Fruit as in type.

Selangor: Bukit Hitam (Kelsall).

I hardly care to distinguish this specifically though it differs in its hairiness and pale underside of leaf. The hairs are rather coarse thick trichomes thickened at the base and narrowed upwards.

*Argostemma denticulatum*, n. sp.

The whole plant twelve inches tall, stem succulent, with internodes one inch long. Leaves fleshy lanceolate acuminate narrowed at the base, margins minutely denticulate towards the tip, paler beneath glabrous except for a few scurfy hairs on the midrib beneath, 3 to  $4\frac{1}{2}$  inches long, half to one inch wide, opposite leaf very small oblong ovate  $\frac{1}{10}$  inch long, caducous, petiole a quarter of an inch long, with several linear bracts at the base, and also at the base of the cyme,  $\frac{1}{10}$  inch long. Flowers about 9 in a compound cyme; pedicels  $\frac{1}{4}$  inch long. Calyx lobes ovate lanceolate acuminate,  $\frac{1}{10}$  inch long. Corolla lobes reflexed triangular acute  $\frac{1}{8}$  inch long white. Staminal cone  $\frac{1}{4}$  inch long rather abruptly acuminate.

Selangor: Ginting Sempah, 3990 feet alt. In thick forest.

This species is allied to *A. lanceolatum*, Ridl., but is quite glabrous, the margins of the leaves minutely denticulate, the opposing leaf smaller, and the flowers fewer and smaller.

*Argostemma Klossii*, n. sp.

A dwarf plant 4-5 inches tall, stem hairy, internodes short. Leaves unequal, larger one elliptic lanceolate acute or subacute base rounded inæquilateral above glabrous or sprinkled with hairs, back white nerves hairy, and hairs sprinkled over it, 2 inches long  $\frac{1}{2}$  inch wide, petiole  $\frac{1}{10}$  inch long, hairy, small leaf ovate cordate  $\frac{1}{8}$  inch long. Stipules orbicular rounded, wider but shorter. Peduncle 1 inch long hairy with a whorl of 4 ovate bracts in the centre. Cyme bracts narrow lanceolate. Flowers 4 or 5 in a simple or

branched cyme, pedicels  $\frac{1}{2}$  inch long hairy. Calyx cupular with lanceate obtuse hairy lobes. Corolla  $\frac{1}{4}$  inch across, lobes narrow lanceolate. Cone of stamens as long thick, shortly acuminate. Fruit cupular hairy.

Johore: Ulu Sayong (Kloss); Negri Sembilan: Bukit Sulu (N. Cantley). "Sumpu Kring."

Allied to *A. johorensis* but much smaller.

The leaves in the Negri Sembilan plant are broader and rounded at the tip.

*Argostemma enerve*, n. sp.

Stem creeping ascending 5 to 8 inches glabrous. Leaves unequal, large one ovate lanceolate base rounded or slightly narrowed aequilateral at base, glabrous fleshy beneath glaucous nerves invisible on both surfaces margin thickened  $2\frac{1}{2}$  inches long by 1 inch wide, petiole  $\frac{1}{4}$  inch long, small leaf ovate cordate acute  $\frac{1}{2}$  inch long. Stipules orbicular obtuse. Cyme solitary terminal 2-4 flowered on a peduncle an inch long glabrous with a circle of small bracts about half way up. Bracts lanceolate obtuse. Pedicels in flower  $\frac{1}{4}$  inch long, in fruit nearly 1 inch long, white hairy. Calyx campanulate hairy, with short triangular teeth. Corolla white half an inch across lobes lanceolate acute  $\frac{1}{10}$  inch across. Stamen cone as long narrow long acuminate curved. Capsule  $\frac{1}{2}$  inch long, campanulate densely appressed hairy.

Negri Sembilan: Gunong Angsi (Feb. 1904) Ridley.

Resembles *A. johorensis* and is allied to it, differing in its aequilateral leaves which are thicker, the nerves being quite invisible, the underside white, and its longer and more slender cone of stamens. In the fruit, form of stipules and smaller leaves it closely resembles *A. johorensis*.

*Argostemma Havilandii*, n. sp.

Stem as thick as a crow quill densely covered with corky reticulations and transverse bars often elevated into flat discs. Leaves distinct very unequal, largest lanceolate acuminate base cuneate, above smooth nerves invisible drying black, beneath glaucous with 8 pairs of nerves inarching within the margin  $2\frac{1}{2}$ -3 inches long  $\frac{3}{4}$  inch wide, petiole  $\frac{1}{2}$  inch long, small leaf linear or lanceolate linear  $\frac{1}{2}$  inch long. Stipules broader lanceolate obtuse. Peduncle 1 inch long slender sparingly pubescent. Flowers small white umbellate on slender hairy pedicels  $\frac{1}{4}$  inch long, with short linear bracts at the base. Calyx tube short lobes ovate obtuse hairy. Corolla in bud ovoid obtuse lobes ovate lanceolate obtuse  $\frac{1}{10}$  inch long. Stamen column short ovoid, anthers lanceolate broad blunt with curved linear appendages.

Sarawak: Kuching (Haviland, 2958).

Very curious in the stem which has fawn colored elevated ridges with transverse bars of a corky nature which are often developed into flattened irregular discs. The small flowers with short petals and stamens are also peculiar,

*Argostemma salicifolium*, n. sp.

Stems to peduncle 8 inches rarely branched, erect hardly creeping at base as thick as a crow quill glabrous below hairy above, nodes close. Leaves lanceolate long acuminate very narrow 6 inches long  $\frac{3}{8}$  inch wide base shortly cuneate, nerves 20 pairs hardly or not visible above, above smooth glabrous keel elevated, beneath pale when alive, midrib hairy; small leaves ovate cordate  $\frac{1}{10}$  inch long. Stipules oblong obtuse longer and narrower than the small leaf. Cyme compound much shorter than the leaf, peduncle slender half an inch, glabrous with a whorl of bracts at the base of the branches, two bracts linear or lanceolate linear very narrow two ovate obtuse. Cyme branches 2 or 3 very slender glabrous, with three small white flowers on pedicels  $\frac{1}{4}$  inch long. Calyx short globose campanulate, lobes ovate acuminate glabrous. Corolla lobes broad lanceolate  $\frac{1}{8}$  inch long, white. Stamens lanceolate in a thick acute cone about as long as the petals hardly appendaged. Fruit  $\frac{1}{8}$  inch long globose campanulate glabrous.

Borneo: Sarawak on Matang (Hullett, Ridley 11751).

A very distinct plant with the habit of *A. Curtisii*, King.

## OPHIORRHIZA.

This genus of herbs occasionally slightly woody is undoubtedly a difficult one, as the species seem to run into each other and requires careful working up from a large series of East Indian specimens. They are very abundant and conspicuous all over the Malay Peninsula in deep forest, or on forest rocks. A large number have been described from India and the Malay islands, and ten from the Malay Peninsula in the Materials. Most of these latter are tolerably distinct but I have not seen *O. fasciculata*, Don, or types of *O. Kunstleri*, King.

*O. Mungos*, L. the type of the genus, is described by King as occurring in all the provinces common and variable in size and pubescence. The type was described from Ceylon, and I have a plant collected there by myself, in fruit, which is undoubtedly *O. Mungos*, but I have not seen anything actually like this or agreeing with the description of the type in the Peninsula.

*O. discolor*, Br. Wall. Cat. 6232a is readily identified alive at least by its deep brown leaves.

*O. erubescens*, Wall. 6233, is based on a plant from Ava, without flowers, and King describes it from Perak. What I take to be his plant is one of the biggest in the Peninsula, but if I am correct in my identifications the leaves are by no means always glabrous, the nerves being minutely mealy pubescent in many plants. The flowers are commonly pink, but occasionally white. I include under this the following specimens.

Selangor: Kwala Lumpur (Curtis), Batu Caves (8238, 8585), Ginting Peras (7403); Perak: Lenggong (14477), leaves glabrous, flowers pink, fruit large; Pahang: Kota Glanggi (flowers white);

Tronoh (Machado), Tampin (Goodenough); Dindings: Lumut (10278).

Allied to this is *O. costata* described below which is a large plant like full size *O. erubescens* but has a dilated strongly ribbed calyx.

A plant distributed under the name *O. erubescens*, Wall. by King collected at Gopeng by Kunstler No. 5853 of his herbarium and quoted by King as that species in the Materials, has velvety leaves hairy on the edge, and cannot be classed with *O. erubescens*, nor does it resemble any other plant I have seen.

*Ophiorrhiza fruticulosa*, n. sp.

A slender branch shrublet, leaves caducous below, leaving bare stems, branches flexuous, dark, nodes dilated  $\frac{1}{4}$ - $\frac{1}{2}$  inch apart. Leaves equal lanceolate acuminate base cuneate minutely pubescent with very short scattered hairs above, longer and more abundant on the edge, dark above, when dry pale olivaceous glabrous beneath,  $1\frac{1}{2}$ - $2\frac{1}{2}$  inches long  $1$ - $1\frac{1}{2}$  inches wide, petiole  $\frac{1}{4}$ - $\frac{1}{2}$  inch long slender. Stipules very small ovate rounded soon caducous. Peduncle slender pubescent half an inch long. Branches of inflorescence as long in fruit, pubescent. Flowers  $\frac{1}{2}$  inch long on pedicels of the same length. Calyx short semiglobose with short ovate lobes. Corolla tube narrow, 3 times as long lobes lanceolate reflexed. Stamens exsert 5 linear cylindric truncate. Style slender exsert. Fruit subreniform oblong upper margin nearly straight hardly indented, quite glabrous  $\frac{1}{8}$  inch wide,  $\frac{1}{2}$  inch deep.

Selangor on the top of the limestone cliffs at the Batu Caves (Ridley 8287, 8583), fl. July, December.

A very distinct species in its slender branching woody habit, small flowers and exsert stamens.

*Ophiorrhiza costata*, n. sp.

A large herb over a foot tall, stem succulent pubescent. Leaves usually equal ovate acuminate base cuneate, 6-8 inches long,  $2\frac{1}{2}$ - $3\frac{1}{2}$  inches wide, glabrous when adult, nerves 9 pairs dark above paler beneath, petiole an inch long. Stipules linear acuminate  $\frac{1}{4}$  inch long. Cyme pubescent peduncle 1 inch long. Branches few about 2 inches long. Bracts none. Pedicels as long as the calyx pubescent. Calyx enlarged subglobose strongly ribbed pubescent, lobes short acute. Corolla stout cylindric pubescent  $\frac{1}{4}$  inch long, pink, lobes reflexed short and broad. Stamens not extruded except the tips. Fruit  $\frac{1}{4}$  inch across scabrid, transversely oblong reniform, upper margin indented.

Pahang: Telom (13644), Gunong Berembun at 6300 feet; Selangor: Bukit Hitam (Kelsall 1908) and near the Semangkok Pass (8584 Ridley).

Distinct in its widely dilated ribbed calyx, I took this at first for a form of *O. erubescens* but it is very distinct, I find. A plant in young flower I got on Gunong Angsi in Negri Sembilan differs

in its much more hairy leaves and stems. The leaves have also more nerves.

*Ophiorrhiza tenue*, n. sp.

Weak herb 4-8 inches tall not or little branched, stem succulent slender hairy. Leaves equal or unequal, ovate thin base broad slightly cuneate subobtuse or acute, sparingly hairy on the upper surface or glabrous, glabrous except the nerves beneath, 2-4 inches long 1 to 1½ inch wide, nerves 5 pairs or more fine, petiole slender half an inch long pubescent. Stipules reduced to a ridge. Cymes very small ½ inch long, few flowered, peduncle puberulous very short. Flowers ¼ inch long. Bracts absent. Calyx dilated small with short lanceolate teeth, pubescent. Corolla white dilated upwards, lobes nearly as long reflexed, tube with hair in the mouth. Stamens extruded filaments filiform extruded, anthers cylindrical truncate. Capsule short linear oblong transversely edge indented ⅓ inch across.

Perak: Telor Pinang (No. 9767) and Tambun; Selangor: Dusun Tua (May 20).

A very odd little species with very few small flowers, of a very different shape from most species, almost urn-shaped. The stamens protruded further than any species I know of.

*Ophiorrhiza communis*, n. sp.

Herbaceous usually not or little branched or in strong plants more branched and occasionally creeping. Stem pubescent or hairy. Leaves ovate or more often lanceolate acuminate at both ends, equal, above dark beneath red or drying yellowish, glabrescent, with sprinkled hairs above, beneath the midrib and nerves mealy pubescent, and occasionally the whole surface beneath puberulous, 4-6 inches long 1-1½ inch wide, petiole 1 inch long. Stipules setaceous. Peduncle 1 inch long or more. Cyme branches slender often eventually spreading over an inch long, flowers conspicuously secund, white, cyme branches and flowers glabrous or somewhat pubescent. Pedicel short as long as the calyx. Calyx ovoid, lobes short blunt. Corolla tubular, lobes short. Stamens not exsert. Fruit transversely oblong ¼ inch across short, upper margin straight, cells somewhat swollen usually puberulous.

Malacca: Bukit Tampin (Goodenough 1860); Selangor: Rawang (7404), Ginting Bidai 7402, 7407, (var. with pink flowers); Petaling: Sempang (12075), Semangkok Pass (8580), Klang Gates (13413); Sungei Ujong: Bukit Sulu (Cantley); Dindings: Pangkor (8345); Perak: Larut Hills to the top; Telok Pinang (9765); Pahang: Telom (13642), Kwala Lipis (Machado 11577); Kedah: Yan; Borneo: Kuching on Matang.

Common all over the woods of the Peninsula except Singapore and Johore where it is replaced by the allied *O. singapurensis*, from which it is distinguished readily by the much less hairy leaves. It is more inclined to creep than that species.



A robust form with large leaves 6 inches long and 2 inches across, occurs on Gunong Mering, Mt. Ophir (3209).

An elongate lanceolate narrow leaved form is from Gunong Tungul, Dindings (7194), and a small compact form with rather more coriaceous leaves was collected at Kwala Teku near Gunong Tahan by Robinson (No. 5534).

I think it probable that this is what Sir George King refers to as *Ophiorrhiza Mungos* of the Peninsula. It is obviously different from the *O. Mungos* of Ceylon the type of the species.

*Ophiorrhiza singapurensis*, n. sp.

Herb a foot tall, little or not branched, stem succulent hairy glabrescent below. Leaves oblong lanceolate, acuminate obtuse, narrowed at the base hairy on both surfaces especially densely on the nerves beneath, light green above pale beneath, drying back brown above and red beneath, 5-6 inches long  $1\frac{1}{2}$ -2 inches wide, petiole hairy 1 inch long. Stipules setaceous hairy. Cyme hairy peduncle half an inch long, branches as long. Flowers white, shortly pedicelled. Calyx short subcylindric slightly dilate, lobes lanceolate. Corolla tube  $\frac{1}{4}$  inch long, lobes very short oblong all hairy outside. Fruit hairy  $\frac{1}{4}$  inch across broadly V shaped, upper margin rather deeply indented, about half as long as wide.

Singapore: Bukit Timah (6899), (Hullett 335), 2855, Pulau Damar, Pulau Ubin (Hullett 424), Jurong 10763; Johore: Gunong Pulai (Ridley 12204), Gunong Panti (R. 4172), Sungei Tebrau (13221); Negri Sembilan: Bukit Sulu (Cantley); Dindings: Lumut (Ridley 7195); Lingga Island (Hullett).

This species appears to be confined almost entirely to the South of the Peninsula, and is abundant in Singapore and Johore, the only species in the island. It does not appear to have been collected by Wallich, nor it is taken up in the Materials. It is the hairiest species of our region except *O. tomentosa*, Jack.

*Ophiorrhiza Kingiana*, n. sp.

Stem unbranched rather woody 6 to 15 inches tall, velvety hairy above. Leaves ovate to oblanceolate shortly acute at the tip narrowed at the base 2-inches long, one inch wide, nerves 8 pairs, above scabrid with minute raised dots, beneath very shortly velvety, of the same colour on both sides, margins fringed with hairs, petiole  $\frac{1}{4}$  inch long scabridly velvety. Peduncles axillary and terminal in flower  $\frac{1}{4}$  in fruit 1 inch long velvety, branches few short. Flowers small white  $\frac{1}{8}$  inch long glabrous. Calyx minute campanulate with short points. Corolla tubular lobes short not reflexed, white. Fruit  $\frac{1}{8}$  inch across, oblong rather deeply emarginate glabrous, somewhat resembling that of *O. erubescens*.

Perak: Dense jungle rock soil near limestone 300 to 500 feet, Gopeng, April 1884 (King's collector 5853).

Most nearly allied to *O. tomentosa* but much less hairy, and with fruit longer and narrower, and glabrous.

*Ophiorrhiza nervosa*, n. sp.

A stout herb with a hairy stem over a foot tall. Leaves ovate acuminate base broad abruptly cuneate to the petiole above glabrous scabrid hairy beneath, the midrib and nerves brown hairy 4-6 inches long 3 inches wide, nerves 15 pairs, branched at near the tip the branch inarching into the next nerve, petiole brown hairy half an inch long. Stipules setaceous. Peduncle 2 inches long hairy. Cyme branches  $1\frac{1}{2}$  inch long. Flowers shortly pedicelled. Calyx cupular ribbed lobes blunt, all hairy as long as the pedicel  $\frac{1}{16}$  inch. Corolla glabrous  $\frac{1}{8}$  inch long, lobes short oblong.

Selangor: Semangkok Pass, (Pahang track) (Machado) May 1893.

A single specimen without fruit, appears quite distinct from its closely nerved rather thick leaves and rough scabrid surface beneath. The leaves are rather fleshy and dry black or nearly so.

*Mussaenda purpurascens*, n. sp.

Sarmentose with dark colored branches thickly covered with purple hairs. Leaves elliptic acuminate broad based 4 inches long and 2 inches wide, subcoriaceous, above glabrescent except the midrib densely purple hairy, beneath paler, nerves 10 pairs and midrib and secondary nerves densely purple hairy, petiole very short  $\frac{1}{2}$  inch long hairy. Compound cymes terminal on the branches very many flowered 2 inches across entirely hairy. Bracts linear. Flowers nearly sessile. Calyx cylindrical urn-shaped with short acute points, hairy, enlarged lobe oblanceolate, much narrowed to the base on a hairy stalk  $1\frac{1}{4}$  inch long, apex rounded blade white hairy on the nerves,  $2\frac{1}{2}$  inches long 1 inch wide. Corolla tube an inch long,  $\frac{3}{4}$  slender cylindrical, upper quarter urn-shaped  $\frac{1}{2}$  inch through, lobes short broadly ovate acute all hairy except the inner face of the lobes. Anthers shortly projecting slightly hairy.

Selangor: Sempang Mines track, Semangkok Pass. Perhaps nearest to *M. macrophylla*, Wall. but with much longer corolla and with rounded bases to the leaves.

*Urophyllum coriaceum*, n. sp.

Shrub, stems white and corky. Leaves in rather distant pairs lanceolate acuminate with a long point, narrowed slightly at the base or rounded coriaceous above smooth and glossy nerves invisible or depressed beneath cinnamon brown when dry, nerves 9-10 pairs elevated, 5 inches long  $1\frac{3}{4}$  inch wide, petiole black  $\frac{1}{2}$ - $\frac{3}{4}$  inch. Stipules caducous. Flowers few in short axillary cymes, with short peduncle and pedicels pubescent. Calyx cupular with a broad base margin truncate with only obscure traces of teeth. Corolla  $\frac{1}{2}$  inch, rather coriaceous, lobes 5, lanceolate acute, hooded, tube short. Anthers oblong surrounded by a tuft of long hairs. Fruit obovoid, crowned with the limb of the calyx tube.

Malacca: Mt. Ophir (Ridley 10105) at an altitude of about 1000 ft.

Distinct in its white stems and coriaceous leaves and stiff petals.

*Urophyllum lasiocarpum*, n. sp.

Shrub, stem densely appressed hairy. Leaves oblong or elliptic acuminate with a long point, base rounded, above glabrescent except the midrib appressed hairy, beneath densely hairy with brown hairs especially long on the midrib and veins 4-6 inches long 1-1 $\frac{3}{4}$  inch wide, petiole  $\frac{1}{8}$ - $\frac{1}{4}$  inch long densely hairy. Stipules caducous linear acuminate hairy. Cymes sessile about as long as the petiole in fruit. Flowers not seen, fruit very shortly pedicelled  $\frac{1}{4}$  inch long turbinate globose densely hairy. Calyx tube entire truncate covered with long hairs. Seed very numerous small ovoid deeply reticulate dark brown.

Perak: Bujong Malacca (Ridley 9726) Sept. 1898.

Though I have not seen flowers of this species it is so distinct that I do not scruple to describe it. The very hairy leaves, and short petioles, and fruit covered with long hairs distinguish it from any species known to me.

*Canthium velutinum*, n. sp.

A shrub, covered with soft velvety hairs, brown when dry. Leaves lanceolate acuminate sessile with an acute apex and rounded base 4 inches long, 1 $\frac{1}{2}$  inch wide densely hairy on both surfaces, nerves invisible above prominent beneath, 5 pairs ascending. Stipules small lanceolate densely hairy. Flowers bright green in axillary tufts, pedicels  $\frac{1}{4}$  inch long hairy. Calyx goblet-shaped, limb very short truncate  $\frac{1}{3}$  inch long. Corolla half an inch long tubular with 4 narrow lanceolate lobes, less than half as long valvate densely hairy outside, inside glabrous except for a tuft of hairs on each lobe above the tube, and a circle of hairs within at the base. Stamens connate into a cone round the stigma. Anthers linear acute, filaments short linear attached to the mouth of the tube glabrous. Style longer than the tube, stigma large oblong bifid at the tip, points recurved. Disc elevated. Fruit pyriform ribbed half an inch long densely velvety, pendulous. Pericarp thin woody 2 celled, 1 cell empty the other containing one seed.

Perak: Gunong Keledang (Ridley 9719).

A very-distinct species in its large velvety flowers and pear-shaped fruit but most nearly allied to *C. pauciflorum*, King.

*Coffea malayana*, n. sp.

A shrub or small tree 10 to 15 feet tall, branches yellowish when dry, 4 angled. Leaves coriaceous elliptic acuminate, base acuminate 7-8 inches long 2 $\frac{1}{2}$ -3 inches wide, nerves 13 pairs meeting on intramarginal loops, drying dark shining above, cinnamon brown beneath, petiole  $\frac{1}{2}$  inch long. Stipule yellowish cartilaginous shining connate into a tube with a lanceolate point  $\frac{1}{4}$  inch long. Flowers in crowded clusters in the axils sessile 14 or more together.

Calyx short cup-shaped, edge entire. Corolla 1 inch long white, tube slender, lobes narrow linear 5;  $\frac{1}{4}$  inch long. Stamens 5, anthers linear apiculate filaments short, all included in the tube and adnate to it above  $\frac{1}{3}$  of the distance from the mouth. Styles very slender, stigma clubbed. Fruit small globose or elliptic one-seeded, Seed globose bony.

Johore: Gunong Panti (Ridley 4177); Selangor: Bukit Hitam (Ridley 7413), Kwala Lumpur (10217); Negri Sembilan: Gunong Berembun (Cantley) and Bukit Kandang; Malacca: Bukit Tampin (Goodenough 1864).

This plant is described by Cantley as 10 to 15 feet tall, the wood used in house building, and fencing, of a reddish colour and sinking in water. He gives the names of Chiapet, and Kambang Semangkok Jantan for it and Goodenough found it called Gading Jantan in Tampin. (Gading is a common name for the small tree *Rubiaceae* such as *Diplospora*). The tree appears to be a true Coffee and has curiously been overlooked in the Material for a flora of the Malay Peninsula, and one specimen (No. 10217) has been referred to by King to *Lasianthus coriaceus* which it slightly resembles in leaf, but the venation is quite different, the inarching nerves being very conspicuous. I have seen very few ripe fruit but all I have seen are one seeded, the seed very hard and globose, with the embryo at the base.

This is a new genus to the Peninsula flora but as the Coffees occur both in India and Java, it is not unexpected. Its crowded flowers, narrow linear petals and one seeded fruit distinguish it from all others of this region.

#### *Becheria* n. gen.

A small branched shrub, with thin large leaves elliptic cuspidate. Stipules ovate triangular. Inflorescence terminal compound cymose. Flowers small white. Bracts lanceolate to orbicular. Calyx lobes 4 orbicular enlarging after the fall of the corolla and becoming oblong obtuse. Corolla tube very short glabrous without and within lobes valvate 4, ovate shorter than the tube. Anthers subsessile linear acuminate 4 in the mouth of the tube. Style shorter clubbed entire. Fruit globose crowned with the enlarged sepals woody, 2 celled, 2 ovuled.

Species 1, Malay Peninsula.

#### *B. parviflora*, n. sp.

A small shrub with pale bark and the habit of *Adenosacme*. Leaves elliptic cuspidate base shortly cuneate, glabrous, midrib depressed above, elevate beneath, nerves slender 12 or 13 pairs elevate beneath, secondary nerves very slender, 7 to 8 inches long  $3\frac{1}{2}$  to  $3\frac{3}{4}$  inches wide, petiole  $\frac{1}{4}$  inch long. Stipules ovate triangular cuspidate nearly  $\frac{1}{4}$  inch long. Peduncle 1-2 inches long with 3 or 4 divaricating branches pubescent, the branches sometimes cymosely branched again. Flowers very small  $\frac{1}{8}$  inch long crowded in cymes

on the ends of the branches. Bracts and bracteoles lanceolate, the former  $\frac{1}{3}$  inch long in pairs, the uppermost ones orbicular with ciliate margins. Calyx lobes orbicular margins ciliate. Corolla greenish white rather coriaceous, lobes valvate ovate shorter than the tube. Anthers linear acuminate.

Pahang: Kwala Tembeling, Tahan river (Becher's expedition); Selangor: near the Batu Caves (No. 8258); Perak at Tapah; St. Barbe isle, South of Singapore (Lauglasse). In thick woods.

The name is associated with Mr. H. M. Becher, an explorer drowned accidentally in the river Tahan in 1893, during an expedition in which this plant was collected.

I cannot find any genus which can include this plant. It has the appearance to some extent of an *Adenosacme*, but the fruit which I have not seen fully ripe separates it. The enlargement of the calyx into distinct wings is curious.

*Ixora micrantha*, n. sp.

Large shrub. Leaves thinly coriaceous lanceolate acuminate at both ends but more gradually at the base  $\frac{1}{2}$  inches long, one inch wide, nerves 9 not very conspicuous, petiole  $\frac{1}{4}$  inch long, winged to the base. Stipules abruptly subulate from a broad base  $\frac{1}{4}$  inch long, compound cymes terminal 4 inches long, peduncles of cyme  $1\frac{1}{2}$ -2 inches long red brown, minutely hairy secondary branches about an inch long, pedicels very short, central flowers of cyme nearly sessile. Bracts ovate acuminate  $\frac{1}{10}$  inch long, or less. Calyx small campanulate with 4 very short rounded lobes  $\frac{1}{10}$  inch long. Corolla tube nearly  $\frac{1}{4}$  inch long slender, lobes oblong rounded at the tip, whole limb about  $\frac{1}{4}$  inch long.

Selangor: Sempang mines.

This species seems most nearly allied to some forms of *I. grandifolia*, Wall.

*Timonius Finlaysoniana*, Hook. fil.

This is reduced to a variety of *T. Jambosella* by King and Gamble, but that can hardly be maintained. The plant is a tidal mud bush with white flowers, and very different from the open country yellow flowered *T. jambosella* in almost every organ. It is undoubtedly as good a species as any in the genus.

*Timonius malaccensis*, King and Gamble.

The type of this is given as collected by me on Mt. Ophir No. 3217, but the only *Timonius* collected by me there bears the number 3231.

This is a shrub, resembling *T. Rumphii*, (which is a tree however) but differs in such characters as one would expect to find in a mountain region. There is also another species in Mt. Ophir, or it may be a further modified form, described further on. Neither exactly fit King and Gamble's description. Another mountain *Timonius* was collected on Gunong Tahan by Robinson and

Wray. It is of the same type as the Ophir plants, but differs in several important characters. The *Timonius Rumphii* of Penang Hill, differs again remarkably from that of the south of the Peninsula, approaching the Mt. Ophir plant in its stiffer leaves which are nearly glabrous and not silvery yellow on the back as is the case in the Singapore plant, and Hooker in the Flora of British India points this out and suggests that they form a different species.

*Timonius oreophilus*, n. sp.

A shrub, bark dark coloured. Leaves broadly lanceolate acuminate at both ends coriaceous, nerves seven pairs, above glabrous, beneath lighter coloured with midrib and nerves covered with appressed hairs, 3 to 6 inches long,  $1\frac{1}{2}$  to 2 inches wide, petiole thickened at the base  $\frac{1}{2}$  inch long back hairy. Stipules lanceolate triangular acuminate hairy, when fallen leaving a circle of hairs. Cymes shorter than the leaf. Male flowers on short cymes, peduncle  $\frac{1}{2}$  inch long rather thick covered with appressed hairs, branches 2 shorter similar. Bracts lanceolate acuminate. Flower  $\frac{1}{8}$  inch long shortly pedicelled. Calyx cupular with 4 short subacute teeth covered with appressed hairs. Corolla  $\frac{1}{4}$  inch long hairy, lobes short blunt. Anthers linear, base prolonged deeply bifid glabrous. Style cylindric hairy. Females in pairs on long 2 inch slender peduncles. Bracts broader, ovate acuminate hairy. Drupe cylindric oblong  $\frac{1}{4}$  inch long hairy crowned with the persistent calyx lobes.

Pahang: Kluang Terbang (Barnes 10886); Mt. Ophir (Hullett 837); Selangor: Bukit Hitam (Ridley 7397, 7399); Kedah Peak (a form with very narrow leaves).

*Saprosma saxicola*, n. sp.

A small bush, glabrous with pale bark. Leaves lanceolate shortly acuminate blunt, base cuneate, coriaceous 2 inches long half an inch wide, glabrous nerves 5 to 6 pairs elevated beneath, petiole  $\frac{1}{8}$  inch long winged nearly to the base. Stipules scabrid tubular with several long subulate teeth. Flowers not seen. Fruit  $\frac{1}{4}$  inch long when dry, blue when alive crowned with four short triangular calyx teeth, and a taller conical disc, very shortly pedicelled.

Perak: Bukit Kamuning (11884 Ridley) on limestone rocks.

Totally different from any other species recorded from the Peninsula and most resembling *S. nativitatis* of Christmas island.

*Saprosma pubescens*, n. sp.

Shrub much branched, bark pale, young parts shortly scabrid pubescent. Leaves elliptic to lanceolate acute or acuminate, base shortly narrowed above glabrous, beneath pubescent or scabrid puberulous on the midrib, 4-5 inches long  $1\frac{1}{2}$ -2 inches wide, petiole  $\frac{1}{8}$  inch or much less long, nerves 5 pairs. Stipules of numerous pale subulate processes,  $\frac{1}{8}$  inch long. Cymes very short in flower of about 5 flowers. Bracts of several subulate teeth. Peduncles and pedicels very short, lengthening in fruit to a quarter of an inch

respectively. Pedicel and calyx tube scurfy pubescent, lobes short ovate 5. Corolla  $\frac{1}{4}$  inch long white tube gradually dilated upwards, pubescent lobes spreading half as long 4, oblong obtuse. Stamens included. Style exsert hairy. Stigmas large cuneate truncate. Fruit globose  $\frac{1}{4}$  inch through scurfily rough, crowned with the short calyx lobes 2 celled 2 seeded. Seed orbicular rounded on the outside and flattened on the inner.

Pahang: Tahan river (Ridley 2210).

var. *hirsuta*. Leaves lanceolate acuminate with a long point narrowed to the base above glabrous beneath hairy all over, flower pedicels longer. Flowers yellow.

Malacca: Relau woods base of Ophir (Ridley 3217).

*Chasalia bracteata*, n. sp.

A woody shrublet, 15-17 inches tall, stem  $\frac{1}{8}$  inch through with pale bark, little or not branched. Leaves narrowly lanceolate acuminate at both ends coriaceous glabrous, nerves usually invisible, 5 pairs, keel elevated, 4 inches long 1 inch wide or less, petiole  $\frac{1}{4}$  inch. Styles connate shortly tubular with 2 short ovate lobes. Inflorescence shortly cymose capitulate terminal half an inch long, on a peduncle an inch long, bracteate. Bracts 2 at base of inflorescence ovate lanceolate  $\frac{1}{4}$  inch long. Bracteoles lanceolate cuspidate. Flowers about 12 on the head sessile. Calyx short entire cup-shaped. Corolla white nearly half an inch long tube nearly straight cylindric below dilate on the upper third, lobes ovate reflexed. Stamens 5 adnate at the base of the dilated portion, filaments very short. Anthers linear oblong rather broad blunt, connective broad, included. Style a little longer, stigma broad reniform emarginate. Fruit not seen.

Selangor: Semangkok Pass at 4000 feet elevation (Ridley 12073).

*Lasianthus venulosus*, n. sp.

A stout shrub, branches appressed hairy when young. Leaves coriaceous elliptic acuminate narrowed shortly at the base, 5-6 inches long  $2\frac{1}{4}$ - $2\frac{1}{2}$  inches wide, above glabrous, beneath hairy on the nerves, nerves 7 pairs elevated on both sides when dry, secondary nerves parallel conspicuous beneath, petiole appressed hairy  $\frac{1}{4}$  inch long. Stipules broad hairy. Glomeruli sessile shorter than the petiole. Bracts lanceolate acute  $\frac{1}{8}$  inch long hairy. Calyx lobes lanceolate acute hairy 4. Corolla  $\frac{1}{4}$  inch long white, tube glabrous, lobes oblong blunt rather large, mouth of tube hairy. Stamens exsert, anthers elliptic 4. Fruit subglobose hairy, crowned with the sepals forming a kind of beak, very hairy, whole fruit  $\frac{1}{4}$  inch long.

Singapore: Chan Chu Kang (6146), Bukit Panjang (12542). Allied to *L. singaporensis*, King.

*Psychotria Cantleyi*, n. sp.

Scandent with slender branches. Leaves ovate acuminate to lanceolate base rounded or more or less narrowed in the more lanceolate forms, glabrous or the midrib on the underside covered with red hairs, 2-3 inches long  $\frac{1}{2}$ - $\frac{3}{4}$  inch wide nerves 6 pairs petiole  $\frac{1}{8}$  inch long. Stipules connate cylindric short with 2 short ovate points. Inflorescence of one or two compact cymes on peduncles  $\frac{1}{4}$  inch long. Bracts linear obtuse  $\frac{1}{8}$  inch long. Bracteoles ovate acute. Calyx short obconic lobes 5 ovate acute. Corolla  $\frac{1}{8}$  inch long, lobes 5 rounded at the tip half as long as the tube, glabrous, outside. Stamens included, anthers oblong, filaments very short with tufts of hair on the corolla tube between style exert rather stout with rather broad recurved stigma. Fruit when young pyriform, adult sub-globose white pulpy,  $\frac{3}{8}$  inch long, pyrenes obovate 3 ribbed outside smooth on the inner face.

Singapore: Chua Chu Kang; Johore: Mount Austin, Kwala Sembong (Kelsall); Negri Sembilan: Buruang (Cantley), Bukit Sulu (Cantley); Selangor: Semangkok Pass (Ridley 8,573); Malacca: Chenana putih (Cantley); Pahang: Kota Glanggi and Sungei Tahan (Ridley 5,830); Perak: Tapah (Ridley 14,072).

Native name "Akar Suburutuh putih." Allied to *P. laxiflora*, Bl. but with very much shorter inflorescence.

## COMPOSITAE.

*Gynura zeylanica*, var. *malasica*.

Herb 2-3 feet tall, stem solid stout ribbed when dry glabrescent. Leaves linear oblong acute strongly lobed and toothed, base dilate half, amplexicaul or sessile 4-5 inches long  $\frac{1}{4}$ - $\frac{3}{4}$  inch wide, upper leaves often linear acute single toothed and not winged at the base, with scattered hairs on the edges and midrib. Capitula numerous usually crowded, in a single head or in strong plants on branches four inches long, peduncles very short to 1 inch long. Capitula  $\frac{3}{8}$  inch long. Basal bracts linear short. Involucral bracts purplish, linear acuminate in one row, fleshy. Calyx pappus nearly as long as the corolla white. Corolla little longer than the involucre pale yellow, lobes short blunt, hardly dilated below, tube nearly white, lobes sometimes tipped reddish. Stamens as long as the lobes pale pink, apiculate. Style arms rather short yellowish. Fruit pappus pure white very fine. Achene cylindric light brown ribbed longitudinally with a circle of brown processes at the apex, with five short hairs on the bands between the ribs.

Waste ground. Common.

Singapore: Tanglin, Tanjong Katong; Johore: Tana Merah Road (Ridley 2741); Pulau Dayong (Kelsall); Muar: Bukit Kayara, Sungei Pauh (Fox); Pahang: Sungei Meiang; Penang: Tanjong Bunga (Curtis 3400); Tringanu: Bundi (Rostado).

One of the plants recommended as a cure for opium craving. A piece said to be from Shanghai was sent me as thus used.



The plant is undoubtedly closely allied to the Ceylon plant which is recorded as a montane plant, only differing in its being much more glabrous. This plant was in the flora of the British India referred to *G. pseudo-china*, Dec. a plant with leaves all sub-radical. The Malayan Peninsula plant has the stem leafy, and its general appearance is that of a *Sonchus*. In the Materials it appears to be described in combination with the next species under the name *Gynura bicolor* a Moluccan plant with much larger spreading heads and apparently absent from the Peninsula. The roots are not tuberous as is said to be the case in *G. pseudo-china*, but fibrous, nor can I fit it to any of the species described from India, Malay islands or China. It only occurs in waste ground in open spaces, cleared by cultivation, and is presumably not a true native of the Peninsula but an introduced weed.

*Gynura rosea*, n. sp.

A herb two to three feet tall. Stem solid ribbed when dry. Leaves petiolate not auricled 12 inches long or much less, deeply lobed to the midrib or nearly so, lobes dentate decurrent on the midrib very variable in size and dentation, quite glabrous-green or often more or less purple. Capitula numerous on branches often 3 inches long, or in a single cluster, whole capitulum  $\frac{1}{4}$  to  $\frac{1}{2}$  inch long, occasionally when in fruit, cylindric. Involucre cylindric hardly swollen at the base green. Lower bracts linear acute. Involucral bracts narrow linear olive green cuspidate minutely hairy, keeled with a scarious edge. Calyx pappus hairs very fine silky bright pink. Corolla pale rose nearly white, lobes tinted pink. Achene brown ribbed glabrous narrowed to the tip, pappus white.

Singapore: Gardens, Pulau Ubin, Chan Chu Kang; Pahang: Telom; Selangor: Kwala Lumpur (Curtis 2349); Perak: Ipoh (Curtis 2995); Penang: Government Hill (Curtis 2995); Dindings: Lumut (Ridley); Java: Sindang Laya (Hullett).

A common weed in waste ground, I can find no name for this plant. King confuses it with the last species under the name of *Gynura bicolor*, DeC. from which species it is entirely different. It is easily recognized by its deeply cut leaves and rose pink flowers.

ERICACEAE.

*Rhododendron spathulatum*, n. sp.

A shrublet with slender branches dark brown and densely minutely pustular. Leaves coriaceous whorled 4 to 8 in a whorl obovate to spathulate apex rounded entire, base cuneate, nerves invisible, back densely glandular pitted half an inch long,  $\frac{1}{4}$  inch wide, petiole rugose,  $\frac{1}{8}$  inch long. Flowers terminal subtended by two or three ovate ciliate coriaceous truncate bracts. Pedicels  $\frac{1}{8}$  inch long, Calyx entire flat annular. Corolla  $\frac{3}{4}$  inch long tubular with short rounded lobes  $\frac{1}{8}$  inch long, glandular dark red. Stamens included glabrous. Fruit conic grooved glandular,  $\frac{1}{8}$  inch long.

Perak: on Gunong Kerbau at 7000 feet altitude, collected by Mohammed Aniff, May 1909.

This species is allied to *Rh. elegans*, Ridl. of Gunong Tahan and even more closely perhaps resembles *Rh. cuneifolium*, Stapf. of Kina Balu, differing in its broader and not retuse leaves and longer and narrower tube of the corolla.

*Agapetes parviflora*, n. sp.

Epiphyte, stems woody slender, bark dark colored, young parts pubescent. Leaves deltoid acuminate with a long point base broad truncate coriaceous glabrous, shining nerves slender not very conspicuous but visible on both surfaces, 6 pairs, reticulations visible on both surfaces, 3 inches long  $1\frac{1}{4}$  inch wide, petiole thick  $\frac{1}{8}$  inch long. Flowers in axillary racemes of 3 flowers, peduncle  $\frac{1}{8}$  inch, pedicel  $\frac{1}{2}$  inch long, pubescent. Bracts numerous linear subulate at the base of the peduncle. Bracteoles at pedicels small ovate all pubescent. Calyx campanulate hairy, lobes 5 shorter ovate hairy. Corolla  $\frac{1}{10}$  inch long shortly tubular cylindric as long as broad, lobes very short ovate obtuse recurved fleshy, pink. Stamens 10 very short, filaments from the base of the tube linear oblong papillose white, anthers orange as long as the filaments, dorsifixed oblong opening by terminal pores with 2 short upcurved spurs behind. Style stout cylindric. Disc pulvinate lobed. Berry globose red hairy  $\frac{1}{4}$  inch through. Seeds numerous ellipsoid flat reticulate.

Selangor: on trees at the Sempang Mines, April 1911.

#### MYRSINEAE.

*Ardisia monticola*, n. sp.

Branching shrub. Leaves narrow lanceolate gradually acuminate to both ends blunt coriaceous  $2\frac{1}{2}$  inches long  $\frac{1}{2}$  inch wide, main nerves and secondary nerves similar fine, reticulations fine conspicuous, leaves dark brown glossy and glabrous, no visible glandular dots. Peduncle slender lateral, 1 inch long bearing 2 or 3 pedicellate flowers, pedicel half an inch long. Calyx lobes 5 ovate margins ciliate short. Corolla half an inch across lobes 5, lanceolate acute very shortly connate pink not gland-dotted. Stamens shorter than the corolla lobes, about  $\frac{3}{4}$  of their length, filaments broad at the base narrowly acuminate. Anthers lanceolate not broad, base emarginate apex acute minutely apiculate. Drupe globose  $\frac{1}{8}$  inch through not gland dotted.

Selangor: Hulu Semangkok (Ridley 12065).

*Ardisia Barnesii*, n. sp.

Shrub, glabrous. Leaves coriaceous elliptic narrowed at the base tip acuminate, subacute nerves main and secondary similar reticulations conspicuous, 3 inches long 1 inch wide, glandular dots visible beneath numerous. Petiole  $\frac{1}{8}$  inch long. Inflorescence terminal and axillary in the upper axils, peduncle  $\frac{1}{2}$ -1 inch long, fairly stout bearing 2 flowers on pedicels half an inch long. Calyx

lobes shortly free, orbicular with ciliate margins half as long as the petals. Corolla lobes 5 short oblong ovate, forming a short broad cone in bud, corolla half an inch across when expanded, tube very short. Stamens  $\frac{3}{4}$  length of corolla, filaments linear. Anthers lanceolate rather broad, not gland-dotted, base broad emarginate.

Pahang: Kluang Terbang (Barnes 10890).

Allied to the last species in its coriaceous finely reticulate leaves, and few flowers from the upper axils but this has broader leaves, and larger sepals, broader and shorter corolla tube. *A. biniflora*, Ridl. belongs to the same group.

*Ardisia pallidiflora*, n. sp.

Shrub, glabrous. Leaves coriaceous lanceolate ovate to ovate elliptic shortly acuminate narrowed at the base, 3-4 inches long 1-1 $\frac{3}{4}$  inch wide, nerves slender 9-10 pairs, primaries hardly distinct from the secondaries, reticulations equally conspicuous, petiole  $\frac{1}{4}$  inch long. Panicles on the ends of the lateral branches with few leaves, branchlets 3-4 short, flowers umbellate at the tips. Bracts to branches linear lanceolate  $\frac{1}{4}$  inch long, lower ones leaf-like. Umbels of 6 or more flowers on short pedicels thickened upwards  $\frac{1}{10}$  inch long scurfy. Bracteoles oblong lanceolate blunt half as long as the pedicels pustular on the edge. Calyx lobes  $\frac{1}{10}$  inch long lanceolate rather narrow, 5 covered with red and black glandular dots. Corolla lobes but little longer oblong truncate 5 pale pink, glandular. Stamens, anthers lanceolate nearly as long as the petals, bases rounded keeled on the inner face. Style little longer.

Johore: Tempayan River (Ridley 13268).

In dense wet forest.

*Ardisia* (§ *Bladhia*) *linearifolia*, n. sp.

A shrublet 6 to 8 inches tall, with a dusky stem, about  $\frac{1}{8}$  inch through covered above with short stiff hairs. Leaves lanceolate linear herbaceous light green, pale beneath, acuminate, margins armed with numerous short thorns undulate, glabrous above pubescent on the keel beneath, nerves about 16 pairs short nearly horizontal and meeting in large conspicuous loops; blade 5 inches long, half an inch wide; petiole  $\frac{1}{4}$  inch long dusky, pubescent. Pseudostipules linear acuminate bodies half an inch long from the stem between and above the leaves. Racemes from the axils of the upper leaves spreading decurved, little more than half an inch long peduncle glabrous half an inch long bearing 3-4 flowers on short  $\frac{1}{4}$  inch long pedicels. Bracts linear acuminate. Flowers very small hardly  $\frac{1}{4}$  inch across. Sepals 5 triangular acute. Petals imbricate not contort white reddish keeled and tipped  $\frac{1}{8}$  inch long. Stamens 5 whitish, filaments very short, anthers lanceolate obtuse. Style slender little longer white filiform.

Province Wellesley on Gunong Bongsu, 12 miles south east of Bukit Mertajam and 7 miles north west of Selama near Sungei

Serdang (Mhd. Aniff). Flowered in the Singapore Botanic Gardens, May 1911.

A very curious little species with remarkably narrow and elegant leaves, and very inconspicuous little flowers, which are dull reddish tinted white, and quite eglandular.

#### STYRACEAE.

*Styrax (Cordyloblaste) obovata*, n. sp.

A stunted shrub, much branched with dark grey bark. Leaves alternate obovate rounded coriaceous base cuneate, nerves five pairs thin bifurcating, anastomosing far within the margin visible on both surfaces, 2 inches long 1 inch wide, petiole thick  $\frac{1}{4}$  inch long. Flowers in short axillary racemes half an inch long all pubescent silky, peduncle short. Bract ovate obtuse as long as the very short pedicel. Calyx  $\frac{1}{4}$  inch long goblet shaped with 5 very short rounded lobes, silky pubescent. Corolla  $\frac{3}{8}$  inch long, entirely pubescent outside and in, lobes oblong rounded half as long as the tube. Staminal tube adnate to the corolla as far as the base of the lobes, and projecting beyond in five broad truncate lobes, hairy within. Anthers small subglobose, about 60. Style stout very hairy about as long as the tube, stigma large capitate. Ovary and disc hairy.

Perak: Gunong Kerbau (Aniff 3820) at 7000 feet altitude.

The smaller size of the flowers distinguishes this from *S. Maingayi* and *S. Scortechinii*, and the form of the leaves also from these and from *S. confusa*.

#### SAPOTACEAE.

*Sideroxylon glabrum*, n. sp.

Tree, leaves broadly lanceolate base acuminate, apex blunt, coriaceous drying greenish, nerves slender 6 pairs, midrib stout 5 inches long 2 inches wide, petiole half an inch long. Flowers in tufts of 3 or 4 on the stem below the leaves, pedicels  $\frac{1}{4}$  inch long. Sepals orbicular 5 imbricate margins ciliate  $\frac{1}{8}$  inch long. Corolla at the base. Staminodes linear from a wider base adnate to the corolla. Ovary densely hairy. Style conic obtuse thick.

Selangor: Sempang Mines (Ridley).

*Payena grandiflora*, n. sp.

A tree, young leaves ferruginous hairy, adults glabrous except for a few red pairs on the midrib, coriaceous thick oblanceolate acuminate at the base, apex blunt or shortly acuminate, above dull slightly shining green, beneath pale glaucescent, nerves about 20 pairs inconspicuous, midrib stout, seven inches long, three inches wide, petiole stout at base tapering upwards,  $1\frac{1}{4}$  inch long. Stipules acuminate hairy caducous. Flowers in clusters below the leaves, pendulous numerous. Bracts small ovate chesnut hairy. Pedicels stout an inch long covered with yellowish red pubescence. Sepals

ovate subobtusely nearly half an inch long 5, the two inner ones whiter and more petaloid on the edge than the outer ones. Corolla over half an inch long, lobes narrow acuminate 10, very little longer than the rounded tube, hardly in two whorls slightly imbricate, silky hairy within. Anthers 20 hairy pale brownish oblong, base bilobed, apex prolonged into a long acuminate point, half as long as the petals. Style half an inch long, apex curved pale green, ovary brown discoid. Fruit cylindrical rufous, an inch long. Seed albuminous.

Singapore: Sungei Morai (6497); Malacca: Panchur (Goodenough 1268).

Described mainly from a tree in the Botanic Gardens Singapore believed to have come from Sumatra, specimens of which have been distributed under the number 113711.

This fine species has been confused with *Payena Maingayi*, Hook. fil. by King and Gamble in the Materials, from which it differs in its stiffer harder leaves, which become whitish beneath when old, and its very much larger flowers and long stout pedicels.

#### APOCYNACEAE.

##### *Ervatamia coriacea*, n. sp.

Tree about 20 feet tall. Leaves oblong obtuse slightly narrowed at the base thickly coriaceous dark green above paler beneath, nerves 15 pairs beneath dotted over with raised glands, 5 to 7 inches long,  $1\frac{1}{2}$ -3 inches wide, petiole half an inch long, axillary glands forming a cup stipuliform. Compound cymes 3 inches long, peduncles 2 inches long, pedicels one inch rather thick. Calyx short campanulate lobes subacute  $\frac{1}{8}$  inch long. Corolla tube half an inch long, lobes oblong lanceolate obtuse white  $\frac{1}{4}$  inch long. Stamens anthers linear oblong mucronate filaments rising from about the middle of the tube, decurrent to the base of the tube. Ovary carpels cohering cone-shaped narrowed upwards to the stigma. Stigma globose with 2 arms.

Selangor: Sempang Mines.

Allied to *E. corymbosa*, King and Gamble but very coriaceous completely glabrous. The plant much resembles *E. dichotoma* of Ceylon but the flowers are smaller.

#### ASCLEPIADEAE.

##### *Gymnema hirta*, n. sp.

Stem  $\frac{1}{4}$  inch through brown hairy, leaves ovate base rounded apex acuminate abruptly, dark green above shortly hairy with dense red hairs on the nerves, beneath densely roughly hairy on the midrib and nerves, nerves conspicuous beneath 4 pairs inarching, with few conspicuous secondary nerves,  $3\frac{1}{2}$  to nearly 4 inches long 2 inches wide, petiole 1 inch long densely brown hairy. Flowers in dense axillary tufts, pedicels hairy  $\frac{1}{8}$  inch long. Calyx lobes linear

hairy  $\frac{1}{10}$  inch. Corolla tube thick hairy,  $\frac{1}{8}$  inch long, lobes oblong short obtuse hairy shorter than the tube. Coronal processes linear hairy not prolonged above the sinus, with a scale like mass of black hairs near the base. Staminal column rather stout dark coloured. Stigma large conical white.

Selangor: Semangkok Pass, April 1911 (15564).

*Gymnema dissitiflora*, n. sp.

Long slender pubescent branched twiner. Leaves membranous when dry ovate or elliptic ovate cuspidate acuminate base cuneate 2 inches long  $\frac{3}{4}$  inch wide, glabrous except the midrib beneath covered with appressed hairs, petiole hairy  $\frac{1}{8}$ - $\frac{1}{4}$  inch long. Inflorescence axillary of a slender hairy rachis with distant cymes of numerous flowers 3-4 inches long. Pedicels  $\frac{1}{8}$  inch hairy. Calyx lobes ovate hairy outside. Corolla tube very short, lobes ovate obtuse short broad valvate. Corolline scales small rounded semiovalate. Staminal column short very small, filaments linear rather broad, anthers rather wide with a short broad appendage, ovary of 2 carpels.

Perak: Tapah (Ridley 14058).

*Tylophora squarrosa*, n. sp.

Stem slender long climbing, internodes 3 inches long glabrous. Leaves ovate cuspidate base broad rounded glabrous 2-3 inches long one inch wide, nerves 4 pairs membranous drying pale. Peduncles axillary an inch long bearing one or two elongating racemes at length half an inch long, covered with lanceolate acuminate persistent crowded bracts  $\frac{1}{20}$  inch long, pedicels  $\frac{1}{8}$  inch long. Flowers very small. Calyx lobes narrow lanceolate glabrous. Corolla tube very short, lobes ovate obtuse. Coronal scales oblong obtuse as long as the filaments. Anthers small with short rounded appendages.

Singapore: Woodlands in mangrove swamps; Johore: Tana Merah Road (Ridley 2737).

The inflorescence is unlike that of any other species known to me.

*Hoya crassifolia*, n. sp.

Stem rather stout with rugose often pale bark rooting profusely. Leaves very coriaceous ovate acuminate slightly cordate at the base, margins undulate and minutely irregularly dentate, nerves very inconspicuous 3-4 pairs at an acute angle, midrib inconspicuous 6 inches long  $2\frac{1}{2}$  inches wide, petiole very short and thick. Peduncle  $1\frac{1}{2}$  inch long rachis half an inch long with elliptic scars, pedicels slender  $\frac{1}{4}$  inch long, hairy with long rufous hairs. Sepals small linear lanceolate acuminate. Corolla half an inch across pink, lobes triangular cuspidate with a long point, villous with long white hairs on the edge. Corolla scales, lower lobes long thick blunt not smooth and spining, upper ones short erect about half as long triangular acuminate. Staminal column short thick

appendages long linear acuminate thin membranous and translucent white.

Perak: Tapah on trees on the Temoh Road (Ridley 14059).

A most remarkable plant with its hard stiff leaves roughened with short tooth-like processes at the edge, hairy pedicels and long thin stamen appendages.

*Hoya occlusa*, n. sp.

Stem rather stout four angled, bark pale. Leaves ovate acuminate in pairs, base obtuse glabrous above shining greenish when dry, below brownish, coriaceous, nerves 5 pairs rising at an acute angle, slender, elevated beneath, 4 inches long 2 inches wide, petiole 1 inch long. Peduncle axillary stout angled 2 inches long, rachis of raceme thickened. Flowers numerous crowded on slender pedicels  $\frac{1}{4}$  inch long, hairy. Sepals linear lanceolate acuminate nearly  $\frac{2}{3}$ ds as long as the petals. Petals ovate obtuse  $\frac{1}{8}$  inch long glabrous, campanulate. Column as long as the sepals. Coronal lobe of 5 processes, lower lobes shorter than upper fleshy, apex broad lanceolate, upper ones lanceolate oblong with broad scarious edges. Staminal column short. Pollinia long pyriform, attached by a slender caudicle to a very narrow dark brown pollen carrier.

Selangor: Top of the Batu Caves, Dec. 1890 (Ridley).

This species is remarkable in that it appears not to fully open its flowers, the petals not being spreading nor reflexed, the corona lobes are not polished as is usual in the genus and the lower lobes are short.

*Dischidia singaporensis*, n. sp.

Slender climbing with orbicular ovate more rarely lanceolate leaves, bases rounded, apex usually acute glabrous fleshy  $\frac{3}{4}$  inch long  $\frac{1}{2}$  inch wide, lanceolate ones nearly 2 inches long by 1 inch wide, petiole  $\frac{1}{8}$  inch long, nerves invisible, midrib slender prominent. Flowers on a short peduncle with thickened rachis, pedicels slender short hairy. Calyx lobes ovate subobtusely hairy. Corolla dilated at base gradually narrowed upwards  $\frac{1}{4}$  inch long pubescent lobes hairy at the tip, lobes linear obtuse. Coronal scales retuse at top with 2 recurved linear arms. Staminal column tall, basal lobes double cylindric pale as long as upper lobes, obtuse. Pollen masses elliptic pyriform scaled on short brown pollen carriers.

Singapore: Changi Police Station, Bukit Mandai on a high tree.

This is distinct in its rather large corolla dilated at the base and narrowed at the apex, with pubescent lobes. *D. Deschampsii*, King and Gamble of which only leaves and peduncles are described cannot I think be intended for this as the nerves are invisible in this species though described in *D. Deschampsii*.

*Dischidia rosea*, n. sp.

Stem slender elongate. Leaves in distinct pairs,  $1\frac{1}{2}$  inch apart, ovate quite obtuse subcordate fleshy, when dry with one pair of

basal nerves, ascending along the edge and 2 pairs branched nerves,  $\frac{3}{4}$  inch long by  $\frac{1}{2}$  inch wide, petiole  $\frac{1}{10}$  inch long. Racemes axillary, peduncle stout,  $\frac{3}{4}$  inch long, rachis short. Bracts minute. Pedicels  $\frac{1}{10}$  inch long. Flowers rose-pink  $\frac{1}{4}$  inch long. Sepals lanceolate obtuse. Corolla urceolate, swollen at base gradually narrowed into a tube with 5 acute ovate short lobes, villous in the mouth. Coronal scales thin large, claw linear, limb reniform three lobed, central lobe small subovate, side lobes incurved ovate. Staminal column large darker colored, filaments part cylindric, conic. Anther wings thick hardly hairy, anther cells parallel, appendages thin short ovate, apices incurved. Pollinia ellipsoid on red cornucopia-shaped carriers. Capsule narrow linear acuminate  $2\frac{1}{4}$  inch long. Seed narrowly oblong base rounded apex truncate, papillose.

Selangor: on a tree Sempang Mines.

It resembles *D. coccinea* in its extremely short or practically no caudicles to the pollinia, otherwise it is nearer to *D. Scortechinii*.

*Dischidia* (§ *Conchophyllum*) *longe-pedunculata*, n. sp.

Leaves oblong convex, approximate,  $1\frac{1}{2}$  inch long half an inch wide hairy light brown, purple beneath. Peduncles stout  $\frac{1}{10}$  inch through  $3\frac{1}{2}$  to 4 inches long hairy. Raceme very short  $\frac{1}{10}$  inch with a number of crowded flowers. Bracts hairy. Pedicels very short and thick. Sepals ovate pink hairy obtuse. Corolla campanulate not narrowed above, cream-yellow, glabrous lobes short ovate triangular pink half as long as the broad globose tube, tube glabrous within, with 15 strong ribs. Corona scales none. Column reaching to the mouth of the tube. Filament column cone shaped, rather long. Anther wings oblong pale not horny large, cells erect parallel. Pollinia pyriform with broad flat semi-elliptic thin pedicels, carrier very small linear elliptic. Anther appendages large ovate acute thin. Carpels rather large cone-shaped. Style apex conical. Follicle solitary,  $2\frac{1}{2}$  inches long,  $\frac{1}{4}$  inch wide when expanded, coriaceous. Seeds thin flat lanceolate pale pustular.

Selangor: Sempang Mines. On a fallen tree.

This is certainly allied to *D. astephana*; Scortechini, but the great size of the peducles, the rounded corolla, not angled glabrous within with no trace of a corolline corona, and the peculiar pollinia make it very distinct. The corolla in life is quite widely open at the top, so that the staminal column is visible. The caudicles of the pollinia are very different from those of most *Dischidia* being quite broad and flat.

#### LENTIBULARIACEAE.

*Utricularia fluitans*, n. sp.

Stems slender six feet or more long, base nude, slender light green with internodes an inch long, above with slender branches 4 or 5 inches long bearing bladders solitary axillary, terminal branches finely cut with terete branchlets, dichotomous flexuous  $\frac{1}{2}$



inch long or more with few bladders. Bladders ovate obtuse. Raceme 3 inches long flowers few white on slender pedicels  $\frac{1}{4}$  inch long. Bracts lanceolate acute  $\frac{1}{10}$  inch long. Calyx lobes ovate obtuse  $\frac{1}{10}$  inch long. Corolla an inch across. Upper lobes reniform or ovate apex rounded  $\frac{1}{4}$  inch long and as wide, lower lobe broader transversely elliptic half an inch wide and  $\frac{3}{8}$  inch long, all white with a yellow central spot. Spur shorter conic obtuse stout  $\frac{1}{4}$  inch long. Fruit not seen.

Johore: Kota Tinggi river.

A very remarkable floating species attached to the base of the mud, flowers very seldom.

#### GESNERACEAE.

##### *Aeschynanthus stenophylla*, Ridl.

This species was described from a fruiting specimen collected by Kunstler in Perak, the flowers being unknown. I obtained a large clump of it a year ago from the house of a planter in Sedenah, Johore, and it flowered in November 1909, I am therefore able to give a fuller account of it. The stems are tufted slender red brown. The lower leaves elliptic fleshy blunt an inch long and  $\frac{1}{4}$  inch wide, dull light green, they become narrower towards the apex of the stem till the uppermost ones are linear, 2 inches long and  $\frac{1}{8}$  inch wide. The flowers are terminal or occasionally lateral, solitary, borne on a pedicel  $\frac{1}{8}$  inch long. The calyx lobes linear acuminate very narrow  $\frac{1}{16}$  inch long. The corolla  $\frac{3}{4}$  inch long, a rather slender straight tube, with short rounded lobes which hardly open, all cream yellow with a purple edge to the tubes. The stamens are hardly longer than the corolla lobes and do not appear to be protruded. The style is short  $\frac{1}{4}$  inch long purple, the ovary longer slender terete green. The plant appears to be self-fertilised, the tube with the stamens slipping off from the ovary and drawing the anthers over the stigma.

##### *Didymorcarpus soldanella*, n. sp.

Stem short, leaves in a rosette about twelve, oblanceolate to oblong, blunt, slightly narrowed towards the rounded base slightly petioled, margins doubly crenate glabrous on both surfaces, bullate above nerves 10-11 pairs, dark green above paler beneath with prominent reticulations, 3 inches long by one inch across. Scapes several erect slender 2 inches tall red pubescent. Flowers 3 in a terminal cyme nodding. Bracts very small linear. Calyx lobes linear, narrow pubescent dull red  $\frac{1}{10}$  inch long. Corolla campanulate oblique violet minutely sparingly pubescent,  $\frac{3}{4}$  inch long  $\frac{1}{4}$  inch across lobes, upper ovate triangular lower lip longer, lobes short ovate triangular. Stamens 2 filaments short sinuate violet, anthers connate, reniform, yellow-white. Ovary and style cylindrical pubescent. Stigma capitate. Capsule narrow cylindrical.

Perak: on Gunong Kerbau (Aniff). Flowered in the Botanic Gardens Singapore, July 1910.

Allied to *D. pumila*.

A very distinct little plant with very pretty bell like flowers of a violet colour. The leaves are subpeltate at the base.

*Boeica nutans*, n. sp.

Stem less or nearly so. Leaves forming a rosette ovate apex rounded, and base also, margins crenulate, four inches or less long 3 inches wide densely hairy above, with white curved hairs, paler beneath with suberect hairs, petiole  $\frac{1}{4}$  inch hairy. Flowers numerous solitary on erect pedicels, nodding. Pedicels 1-1 $\frac{1}{2}$  inch long hairy. Calyx lobes lanceolate acute densely hairy. Corolla quite regular  $\frac{1}{2}$  inch across violet blue, tube very short, lobes oblong ovate rounded at the tip all equal. Stamens 4, anthers elliptic sessile, erect, with a thick connective orange yellow polished outside, cells linear much narrower, on the inner face, introne pollen yellowish white, dehiscence the whole length. Ovary conic passing gradually into the short thick style, greenish white pubescent. Stigma orbicular.

var. *a*, leaves green with white hairs. *b*, leaves deep olive with violet hairs.

Perak: on Gunong Kerbau (Mohammed Aniff).

This pretty plant is certainly allied to *Boeica brachyandra*, Ridl. though it differs in the broad rounded leaves, one flowered pedicels, perfectly regular flowers and very different stamens. The pollen I found attacked by small nematode worms.

*Chirita uniflora*, n. sp.

Stems slender 15 inches long hairy. Leaves lanceolate or oblanceolate shortly acuminate acute base cuneate, nerves 5 pairs hairy with multicellular hairs 2 inches long and less than one inch wide, petiole half an inch long slender. Flowers solitary terminal on a slender hairy pedicel with 2 linear bracts  $\frac{1}{10}$  inch long about half way down. Calyx lobes very narrowly linear acuminate hairy  $\frac{1}{8}$  inch long white. Corolla tube very short hardly twice as long as the calyx, limb half an inch across, upper lobes short, linear oblong obtuse, midlobe broad rounded, all white with 3 violet streaks on a yellow patch on the lower lip. Stamens 2 very short, anthers ovoid. Style hairy longer, stigma elongate flat.

Selangor: Sempang Mines, one plant only in flower.

Perhaps nearest to *Ch. viola*, Ridl., very different from anything I have seen elsewhere, and not much like any others of the genus.

#### ACANTHACEAE.

*Justicia pectinella*, n. sp.

Here about 2 feet tall, stems rather stout internodes 2 inches long, nodes swollen. Leaves rather fleshy ovate or oblanceolate narrowed gradually to the base, acuminate, usually inaequilateral

margins undulate glabrous except the scurfy midrib on the back densely dotted with raphides bundles on both sides, nerves 6 to 9 meeting with loops within the margin, 4 to 6 inches long  $1\frac{1}{2}$ -3 inches wide, petiole winged to the base. Racemes terminal and axillary 2 inches long, with a short peduncle. Bracts lanceolate acuminate  $\frac{1}{10}$  inch long. Flowers yellow secund crowded. Floral bracts ovate subacute shorter than the calyx green. Calyx  $\frac{1}{8}$  inch long, lobes subulate linear purple deeply cut to near the base. Corolla yellow  $\frac{1}{2}$  inch long, tube straight stout, upper lobe oblong truncate, lower lobe broader oblong. Anthers elliptic with long white appendages. Capsule club-shaped half an inch long. Sepals as long as the slender portion,  $\frac{1}{4}$  inch long. Seed orbicular pubescent.

Johore: Gunong Panti; Pahang: Kwala Tahan (Ridley 2185), and Kota Glanggi woods; Selangor: Ginting Sempah.

This species has the flowers distinctly secund as has *J. secundiflora* of Temengoh, but the whole texture of the plant is that of *J. uber* a fleshy succulent herb and quite glabrous. The leaves vary a good deal; those of the Johore and Selangor forests being ovate, the Pahang ones, lanceolate and often oblique.

*Filetia hirta*, n. sp.

An ascending herb, stem somewhat woody purple hairy above. Leaves ovate to ovate lanceolate slightly narrowed to the base, apex shortly acuminate obtuse  $2\frac{1}{2}$  inches long 1 inch wide, nerves 6 pairs, with multicellular hairs on both surfaces, but very densely on the midrib and nerves of the undersurface petiole  $\frac{1}{4}$  inch long, densely hairy. Raceme 3 inches long, base ( $1\frac{1}{2}$  inch) nude, hairy. Bracts linear hairy  $\frac{1}{4}$  inch long. Sepals linear acuminate hairy, free nearly to the base, half as long as the corolla. Corolla half an inch long, tube stout curved, limb white upper oblong obtuse, lip somewhat similar yellow, corolla sparingly pubescent all over, outside, lip glabrous except for a few hairs. Anthers linear hairy. Pistil glabrous, style hairy.

Selangor: Sempang Mines.

This resembles considerably *F. Scortechinii*, Clarke which grows in the same spot but which is almost or completely glabrous all over.

*F. Scortechinii*, Clarke of which only one very bad specimen of Scortechini is in the Singapore herbarium is described as a much branching under shrub. However like *F. Ridleyi* it is more or less of a creeping plant throwing up a number of short stems, about 6 inches tall. The flowers like those of all of our species are white with a yellow palate on the lip. The capsule (which has not been described is  $\frac{3}{4}$  inch long narrow at the base dilated at the upper end and shortly beaked. It contains 4 seeds in the upper end, flat papillose and somewhat obovate. It occurs on the Gunong Semangkok, and at Gunong Berembun above Telom.

What I take to be *F. paniculata*, Clarke also occurs on Gunong Semangkok (No. 12091).

*Leda flava*, n. sp.

Herb about 3 feet tall. Leaves ovate shortly acuminate at the tip narrowed at the base, glabrous rather fleshy, nerves about 8 pairs prominent, 4 inches long 2 inches wide, silvery, petiole  $\frac{1}{2}$  inch long. Panicle terminal of 3 or four strict branches, scurfy, flowers rather numerous quaquaversal, four inches long. Bracts linear acute  $\frac{1}{10}$  inch long. Calyx  $\frac{1}{10}$  inch long of 5 subulate linear lobes shortly connate at the base. Corolla yellow  $\frac{2}{5}$  inch long, tube thick as long as the limb, scabrid upper lobe, trifid lobes obtuse, lower broader deflexed. Stamens 2, anther cells parallel, with no appendages connective on the back minutely hairy.

Perak: Tapah near Temoh, swampy woods (14053).

This has the habit of a *Justicia* but the anther cells are parallel and not spurred.

## EUPHORBIACEAE.

*Euphorbia Synadenium*, n. sp.

A shrub about 2 feet tall, stem smooth brownish rather succulent. Leaves alternate oblanceolate spatulate subacute or blunt narrowed to the petiole fleshy green, nerves invisible 4 inches long  $1\frac{1}{2}$  inch wide, petiole  $\frac{1}{2}$  inch long. Inflorescence solitary or in pairs 1 male and 1 female axillary. Male, peduncle  $\frac{1}{4}$  inch long thick with two short ovate bracts purple pink. Involucre as long pink lobes 5 thick semiorbicular light green, punctate. Glands separate truncate oblong narrowed at the base, apex lacinate pink ten. Flowers numerous. Stamens solitary, filament thickened at the base above filiform, surrounded by a fimbriate calyx of narrow white linear lobes about 8, anther cells globose separate. Female involucre smaller subangled with 2 dark pink lobes much shorter not expanded greenish yellow, glands flat incurved lacinate pale green. Pistil solitary surrounded with pale green lacinate calyx, ovary subglobose shortly stalked. Styles three subulate not plumed twisted together.

Penang Hill: near the Waterfall; Selangor: Langat.

In rocky woods. I have this curious plant in cultivation in the Botanic Gardens in Singapore.

Baillon described a species of *Synadenium* as *Euphorbia Synadenia* but this has been referred to its genus *Synadenium*, so that the above name will stand.

## CUPULIFERAE.

*Quercus Rassa*, Miq.

On the top of the mountain Gunong Semangkok grow two oaks, which are certainly not typical *Q. Rassa* but at the same time there are in the Singapore herbarium specimens which seem to be intermediate forms. The typical *Q. Rassa* is a tall tree with very narrow close veined coriaceous leaves, and this is the plant which grows on Penang hill, where it does not vary to any extent. King in the Calcutta Annals mentions a variety *latifolia* which I take it is represented by his 6983 from Gunong Hijau in Perak.

On Gunong Semangkok at 4375 feet altitude we have a plant much resembling this. Its leaves and branches are glabrous and the leaves stiffly coriaceous ovate or oblong ovate acute 3 inches long  $1\frac{1}{2}$  inch wide, with only 6 pairs of nerves, which are distant from each other, the minute tessellate reticulations so conspicuous in typical *Rassa*, are much less conspicuous. The petiole is a quarter of an inch long. The inflorescence terminal is stout, its bark on the rachis black and minutely pubescent. The spikes 3 inches long and stiff. The male flower bunches are rather distinct.

The acorns are sessile, with a shallow cup half an inch across,  $\frac{1}{8}$  inch deep, with about ten rings; these have the upper edge waved with distinct teeth. The glans is a short broad cone half an inch long beaked light brown and minutely silky (No. 12061 of my collection). The plant growing on the top of the Trig. station which of course has been cleared and is now covered only with low bushes is itself a low bush only a few feet tall. A specimen obtained by Barnes from Kluang Terbang (10910) resembles this somewhat but the leaves are mostly more intermediate between that and those of typical *Rassa*, some however are ovate with fewer nerves, and somewhat similar is Kunstler's No. 6983, from Gunong Hijau in the Taiping hills, which he describes as a tree 40 to 46 feet tall. This is the plant I take to be King's var. *latifolia*.

With this grows on Gunong Semangkok, a shrubby oak with lanceolate long acuminate leaves, which when young are coppery red. They are about four inches long and one inch wide. The petiole a quarter of an inch long. The young leaves are sprinkled all over with stellate hairs and these are densely crowded on the midrib and petiole. The adult leaves are nearly glabrous, the reticulations are the same in appearance on the upper surface as in the Penang *Rassa*, but are inconspicuous on the smooth lower surface. The branches are covered with a woolly mass of these stellate hairs as are the slender weak spikes. This I would call the var. *lanuginosa*.

Both of these two forms or varieties grow closely intermixed in scrubby bushes up to the waist or shorter on the top of the hill, but I saw the var. *lanuginosa* further down the hill about 20 feet tall.

Had I not seen these plants intermixed with intermediate foliage, I should certainly have distinguished them specifically, both from each other and from *O. Rassa*, but I would rather class that species as a very variable oak varying according to altitude and exposure, of the mountain on which it grows.

#### ORCHIDEAE.

*Microstylis flavo-viridis*, n. sp.

Stem weak ascending leaves scattered; whole plant 11 inches long. Leaves thin herbaceous lanceolate 2 inches long  $\frac{3}{4}$  inch wide, narrowed to the petiole half an inch long. Racemes slender few

flowered, flowers distant small. Bracts very narrow lanceolate long acuminate  $\frac{1}{8}$  inch long deflexed green. Flowers  $\frac{1}{8}$  inch long greenish yellow turning to light red, pedicels very slender longer than the bracts. Upper sepal linear oblong, laterals deflexed wider oblong obtuse. Petals narrower oblong. Lip subtriangular oblong, auricles long pointed, limb triangular lanceolate tapering towards the apex which is retuse. Column short.

Perak: Gunong Kerbau on Gunong Bal at 4500 ft., May 1909. Mhd. Aniff.

"Flowers greenish yellow changed to light red, leaves green near the midrib and light red near the edge."

*Oberonia pendula*, n. sp.

Stems several in a tuft 4 to 13 inches long slender pendulous. Leaves remote distichous linear acute ensiform blade 1 inch long and  $\frac{1}{10}$  inch across sheath as long. Spike 4 inches long slender, flowers yellow in close set whorls, ovary very short. Bracts lanceolate acuminate as long as the flowers. Sepals ovate triangular. Petals narrower linear. Lip 3-lobed side lobes short triangular acute, midlobe lanceolate entire much longer, apex subacute, anther skull-shaped with a small tip.

Selangor: on a tree in forests by the track to the Sempang Mines, April 1911.

*Bulbophyllum* (§ *Diphyes*) *paullum*, n. sp.

Rhizome slender creeping, pseudobulbs distant conic curved  $\frac{1}{4}$  inch long  $\frac{1}{10}$  through at the base half an inch apart. Leaf oblong linear obtuse  $\frac{3}{4}$ -1 $\frac{1}{2}$  inch long  $\frac{1}{10}$  inch wide, base narrowed into a petiole. Scape filiform 1 $\frac{1}{4}$  inch long with a sheathing bract in the middle. Flowers 4 or 5 in a short congested raceme with lanceolate acute bracts, pedicel  $\frac{1}{4}$  inch long. Sepals linear acuminate not gibbous narrow  $\frac{1}{2}$  inch long. Petals linear oblong quite obtuse, one third of the length, all pale whitish. Lip short fleshy curved, base broad with a narrow claw, apex blunt orange. Column rather large, foot long free upcurved. Stelidia 2 lanceolate acuminate as long as the anther, which is rather large rounded and grooved on the top.

Selangor: Sempang Mines on a tree. A single specimen.

Allied to *B. concinnum*, Hook. fil. but with very different foliage.

*Dendrobium* (§ *Pedilonum*) *chloroleucum*, n. sp.

Stems slender 24 inches long  $\frac{1}{2}$  inch through, the internodes about 2 inches long. Leaves thin lanceolate acuminate acute 4 inches long  $\frac{3}{8}$  inch wide. Flowers solitary on a slender peduncle an inch long. Ovary and pedicel  $\frac{3}{4}$  inch long. Sepals lanceolate, the upper one half an inch long, the lower ones similar with a mentum slender curved acuminate blunt, an inch long. Petals rather narrower than sepals all cream colour passing into green

at the back and tip of the mentum and tip of the sepals. Lip entire spatulate  $1\frac{1}{4}$  inch long, the claw linear with a low V-shaped keel at the base, lamina oblong tip rounded narrowing into the claw margins undulate,  $\frac{1}{2}$  inch wide, canary yellow. Column base and foot green deeply channelled in front, stelidia erect little longer than the anther oblong truncate slightly retuse, orange colour. Anther white apex rounded, front margin truncate.

Perak: Gunong Kerbau, coll. Mhd. Aniff.

Perhaps nearest to *D. hymenopterum*, Hook. fil. but differing in colour, shape of sepals, and in the keel on the disc. A dull looking plant even for this section.

*Eria* (*Bractescentes*) *ramulosa*, n. sp.

Stem creeping, branched several times cylindric or slightly thickened upwards, branches 6 inches long  $\frac{1}{4}$  inch through covered with a silvery grey epidermis finely striate. Leaves 2 terminal lanceolate acute narrowed at the base 3 inches long  $\frac{3}{4}$  inch wide thin textured. Raceme 2 inches long from below the leaves; about 6 flowered. Bracts  $\frac{1}{4}$  inch long oblong creamy white. Pedicel and ovary as long, covered with dark red scurfy hairs. Upper sepal lanceolate acute  $\frac{1}{4}$  inch, lower ones falcate scrotiform gibbous at base, adnate to the column foot, all pale flesh colour with pink nerves. Petals lanceolate linear falcate much narrower than the upper sepal. Lip as long as the sepals, three lobed. Side lobes falcate subobtusate pubescent pink darkest at the tips terminal lobe longer reniform bilobed, with a short tooth in the notch, disc between the side lobes whitish with a central purple-pink line elevated, and ending on the midlobe at the base in a transverse purple pink V, a shorter keel runs on each side, base brown purple, apex dark pink rest pale, dilated forwards and ending in a short raised wing at the base of the side wings. Column broad with a short foot white. Anther quadrate thin, pollinia subequal ovoid flattened bright yellow. Foot of column shorter than upper part adnate to the sepals.

This species is allied to *E. xanthocheila*, Ridl. and *E. carnea*, Ridl. The lip however is distinct in the broad reniform retuse midlobe, and the two short winged lateral keels, with the low median linear one.

It was sent by Mr. Long from the Thaiping hills and flowered in the Botanic Gardens Singapore, March 1910.

*Eria* *saccata*, n. sp.

Habit of *Eria densa*, Ridl. pseudobulbs sausage-shaped cylindric 4 inches long 1 inch through. Leaf coriaceous slightly flaccid lanceolate acute narrowed to the petiole 8 inches long  $1\frac{1}{2}$  inch wide. Spikes 4 inches long rachis stout nigrohirsute. Bracts ovate white reflexed  $\frac{1}{4}$  inch long, flowers numerous densely crowded yellowish white. Ovary and pedicel half an inch long, covered with purple scurfy hairs. Upper sepal ovate obtuse white,  $\frac{1}{5}$  inch long, laterals broadly ovate forming between a long broad white mentum nearly

half an inch long. Petals shorter than the sepals ovate triangular obtuse pale pink. Lip as long as the sepals, claw long white, with pink centre rather broad oblong deeply channelled, the edges meeting near the limb, limb fleshy broad orbicular not trilobed with an irregular undulate margin, disc fleshy pustular, reddish with yellow centre. Column rather straight pink, foot very straight apex orange. Stelidia 2, acute subulate on each side. Anther broad flat, 2 celled purple black with a broad white margin and a short tooth at each side. Pollinia 8, pyriform pale yellow.

Perak: Gunong Kerbau (Md. Aniff) cult. in Hort. Bot. Singapore, 1910.

Very odd from its long *mentum* like the spur of a *saccolabium* and the complete absence of the basal lobes to the lip near *E. densa* and *E. rhynchostyloides*.

*Ceratostylis linearis*, n. sp.

A tufted plant, with a short rhizome emitting close tufts of stems with two leaves on each, rhizome covered with ovate lanceolate ribbed brown sheaths. Leaves linear fleshy channelled above  $2\frac{1}{2}$  inches long  $\frac{1}{10}$  inch wide. Flowers solitary on a short  $\frac{1}{4}$  inch peduncle with a long lanceolate acute brown, ribbed bract. Pedicel terete white hairy, as long. Flower  $\frac{1}{5}$  inch long. Upper sepal oblong white pubescent, lower ones similar, prolonged at the base into a cylindric obtuse spur as long as the ovary. Petals lanceolate acuminate as long as the lip white with a purple patch on each end. Lip as long as the sepals base broad side lobes short upcurved, seed lobe large ovate obtuse fleshy, all white. Column short and broad, stelidia very short, nearly obsolete. Clinandrium deep edged with purple. Anther skull-shaped large. Capsule elliptic narrowed at the base  $\frac{1}{4}$  inch long.

Singapore: Passir Panjang on trees. Flowered July 1910.

Allied to *C. cryptantha*, Ridl. differing in the long acuminate petals and very different lip.

*Coelogyne casta*, var. Gunong Semangkok.

This differs from the plant originally obtained in Bukit Hitam by Kelsall, in its shorter more conic thicker pseudobulbs and in its broader leaves some of which attain to a foot with a breadth of one inch and three quarters or even 2 inches, these leaves have a lanceolate outline. Other plants had leaves exactly like the type. The flowers exactly resemble those of the type but the yellow on the lip is more brilliant and the bright brown veins pass into a bright raw sienna blotch on the midlobe. The plant is very abundant at Sempang and Gunong Semangkok and is deliciously fragrant.

*Coelogyne concinna*, n. sp.

Pseudobulbs ovoid  $\pm$  angled apex blunt deep green closely appressed  $1\frac{1}{2}$  inch long  $\frac{3}{4}$  inch wide slightly flattened. Leaf elliptic lanceolate acuminate narrowed at the base thinly coriaceous 6 inches



long 2 inches wide 5 nerved, petiole  $\frac{1}{2}$  inch. Flowers 1 or 2 from the base of the pseudobulb, peduncle, 1 inch long covered with close fitting sheaths lanceolate acuminate. Bract lanceolate acute white cauducous. Pedicel and ovary half an inch long. Sepals lanceolate oblong subacute greenish white  $1\frac{1}{2}$  inch long  $\frac{1}{4}$  inch wide. Petals very narrow linear as long white. Lip 1 inch long, side lobes rounded at the tip, midlobe as long oblong rounded at the tip, keels 3, two running to the tip thick near the base minutely papillose with a double row of papillæ, median keel not papillose, disappearing in the centre of the tip, all white except the papillæ and base of middle keel orange. Column half as long as the tip white, clinandrium margin long rounded slightly toothed. Anther cap ovoid narrowed at both ends yellow.

Sumatra: Dolok Baros, Deli (coll. Moisseniac).

This pretty species was sent with other living orchids from this estate. It is allied to *C. Cumingii* but very different in form of the pseudobulbs, size of flower and the lip.

*Saccolabium latifolium* var. *parviflorum*.

Leaf lorate 9 inches long  $1\frac{1}{2}$  inch wide. Panicle 18 inches long, peduncle 10 inches, branches short and dense. Flowers hardly  $\frac{1}{4}$  inch across, nearly all bright yellow, sepals margined with red, spur yellow. Callus in spur mouth broad oblong dentate with several short teeth white. Pollinia globose, pedicel narrow linear, disc rather broad oblong truncate.

Sempang: Matang Road, Taiping (Goldham).

Though this differs much in the size of the flowers from *S. latifolium*, Ridl. in which they are half an inch across and in the other points mentioned, the structure is all through so much the same that I am unwilling to distinguish it specifically.

*Podochilus sumatrensis*, n. sp.

Stems several erect 5 inches tall occasionally emitting lateral shoots. Leaves distichous articulate oblong, base slightly narrowed apex obtuse, minutely bilobed, half an inch long  $\frac{1}{3}$  inch through thick coriaceous shining grooved above. Racemes subterminal or axillary slender many flowered half an inch long. Bracts ovate lanceolate acuminate  $\frac{1}{10}$  inch long. Ovary twice as long glabrous subterete. Flowers white  $\frac{1}{3}$  inch long. Upper sepal oblong obtuse laterals oblong ovate obtuse connate gibbous at base. Petals spatulate oblong rounded at the tip base narrowed into a claw, nearly as long, but not so wide as the sepals. Lip subtrilobed, side lobes broad involute rounded at the tip, midlobe longer rounded a rather broad double keel at the base. Column short, rostellum 3 toothed, teeth lanceolate setaceous, the central one longest. Anther cup-shaped with a long oblong straight beak. Pollinia 4 transparent aciniform much shorter than the narrow lanceolate brown gland (disc).

Sumatra: Deli Baros. Cult. in H. B. Singapore, June 1910.

Allied to *P. Zolingeri*, Rehb. f. differing in the straight not oblique sepals, broader clawed petals, and three lobed lip.

## SCITAMINEAE.

*Amomum cylindrostachys*, n. sp.

Stems about 6 feet. Leaves lanceolate acuminate caudate glabrous, gradually narrowed to the base, 9 inches long  $1\frac{1}{4}$  inch wide, sheath glabrous about 6 inches long, ligule truncate oblong papillose  $\frac{1}{4}$  inch long entire. Peduncles 5 inches long covered with oblong distant sheaths an inch long or less split to the base. Spike cylindrical 3 inches long 1 inch through. Bracts ovate lanceolate half an inch long,  $\frac{1}{4}$  inch through green. Calyx  $\frac{1}{4}$  inch long ampliate urceolate pale with three short lobes. Corolla  $\frac{3}{4}$  inch long, lobes narrow lanceolate acute white. Lip 3 lobed,  $\frac{2}{3}$  inch long side lobes short rounded, midlobe oblong truncate yellow darker in the centre with 2 red marks at the base. Anther crest, trifold dark red, the central lobe very short, the laterals narrow arcuate linear curved.

Selangor: Sempang Mines track on a bank at the foot of the hill, April 1911 (No. 156).

This species is allied to *A. squarrosum*, Ridl. differing in its glabrous leaves and thinner blunter bracts.

## LILIACEAE.

*Dracoena robusta*, n. sp.

Stem 9 feet tall and nearly 2 inches through grey. Leaves linear lanceolate acuminate acute, with broad bases 10 inches long one inch across. Bracts on base of rachis linear acuminate. Raceme unbranched stout over a foot long. Flowers in tufts of 3, with three ovate acuminate bracts as long as the pedicels  $\frac{1}{2}$  inch long, numerous rather crowded. Perianth  $\frac{3}{4}$  inch long, base dilated pink, tube as long as the linear lobes apices of lobes blunt, white. Stamens shorter filaments three fourths of the length of the lobes. Anthers oblong obtuse.

Selangor: Sempang Mines track in thick forest.

This seems to be nearest to *D. Porteri* of Wallich, a common low slender shrublet usually two or three feet tall, but is very much bigger and stouter in all parts.

*Pandanus globuliferus*, n. sp.

A dwarf pandan of the habit of *P. parvus*, Ridl., stem  $\frac{1}{8}$  inch through. Leaves linear acuminate caudate 8 inches to a foot long, half an inch wide, margins armed with very small and slender thorns, apex narrowed, with closer set thorns, ending rather abruptly in a long setaceous thorny point 2 inches long. Syncarps solitary terminal globose an inch long with broad subtending bracts oblong cuspidate thorny, as long and  $\frac{1}{4}$  inch wide. Peduncle 1 inch long. Drupes with a rounded broad top, not dilated. Style  $\frac{1}{2}$  inch long

very slender spiniform. Stigma for the whole length on the lower face.

Selangor: Gunong Semangkok, at the top.

Allied to *P. collinus*, Ridl. but not bushy, leaves broader and more abruptly caudate. Drupes not dilated at the top and style much more slender.